DOCUMENT RESUME

ED 058 497 AA 000 801

TITLE Schooling for the Future: Toward Quality and Equality in American Precollegiate Education.
INSTITUTION Educational Inquiry, Inc., Los Angeles, Calif.
SPONS AGENCY President's Commission on School Finance, Washington, D.C.
PUB DATE 15 Oct 71
NOTE 609p.

EDRS PRICE MF-$0.65 HC-$23.03
DESCRIPTORS Curriculum Planning; *Educational Change; *Educational Finance; *Educational Planning; *Educational Quality; Educational Technology; Elementary Schools; Individualized Instruction; Problem Solving; *Public Schools; Secondary Schools; Social Factors; Urban Areas
IDENTIFIERS *United States

ABSTRACT

Educational changes and innovations needed to improve the quality of American elementary and secondary education were studied. The study sought to do the following: (1) identify the central problems, issues, and directions of American education to 1980 and beyond; (2) project a reasonably attainable set of conditions and changes to be achieved for coping with these problems, issues, and directions; (3) articulate strategies for maintaining continuing change; and (4) propose structural arrangements to support desired changes and strategies. The focus is on metropolitan settings. The report is divided into two parts: Part I contains, in an abbreviated form, the essential arguments, proposals, and recommendations of Part II; and Part II contains four task force reports: A. Education in 2000; B. Education and Schooling in 1980; C. Strategies for Change; and D. Institutional Arrangements in 1980. Recommendations related to dealing with change are: (1) Continuous planning must be effected by creating autonomous, national policy planning centers; (2) There must be decentralization in the formulation of regulations and in the decision making process; (3) Educational opportunity must be provided on an individualized basis; (4) The curriculum must be overhauled; and (5) Research must be conducted in all the stated areas. (For related document, see ED 058 473.) (DB)

Schooling for the Future

Toward Quality and Equality in American Precollegiate Education

Prepared by
Educational Inquiry, Inc.

Submitted to The President's Commission on School Finance

THIS IS ONE OF SEVERAL REPORTS PREPARED FOR THIS COMMISSION. TO AID IN OUR DELIBERATIONS, WE HAVE SOUGHT THE BEST QUALIFIED PEOPLE AND INSTITUTIONS TO CONDUCT THE MANY STUDY PROJECTS RELATING TO OUR BROAD MANDATE. COMMISSION STAFF MEMBERS HAVE ALSO PREPARED CERTAIN REPORTS.

WE ARE PUBLISHING THEM ALL SO THAT OTHERS MAY HAVE ACCESS TO THE SAME COMPREHENSIVE ANALYSIS OF THESE SUBJECTS THAT THE COMMISSION SOUGHT TO OBTAIN. IN OUR OWN FINAL REPORT WE WILL NOT BE ABLE TO ADDRESS IN DETAIL EVERY ASPECT OF EACH AREA STUDIED. BUT THOSE WHO SEEK ADDITIONAL INSIGHTS INTO THE COMPLEX PROBLEMS OF EDUCATION IN GENERAL AND SCHOOL FINANCE IN PARTICULAR WILL FIND MUCH CONTAINED IN THESE PROJECT REPORTS.

WE HAVE FOUND MUCH OF VALUE IN THEM FOR OUR OWN DELIBERATIONS. THE FACT THAT WE ARE NOW PUBLISHING THEM, HOWEVER, SHOULD IN NO SENSE BE VIEWED AS ENDORSEMENT OF ANY OR ALL OF THEIR FINDINGS AND CONCLUSIONS. THE COMMISSION HAS REVIEWED THIS REPORT AND THE OTHERS BUT HAS DRAWN ITS OWN CONCLUSIONS AND WILL OFFER ITS OWN RECOMMENDATIONS. THE FINAL REPORT OF THE COMMISSION MAY WELL BE AT VARIANCE WITH OR IN OPPOSITION TO VIEWS AND RECOMMENDATIONS CONTAINED IN THIS AND OTHER PROJECT REPORTS.

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SCHOOLING FOR THE FUTURE

TOWARD QUALITY AND EQUALITY IN AMERICAN PRECOLLEGIATE EDUCATION

A Report
to
The President's Commission on School Finance

Educational Innovation

What changes in purposes, procedures or institutional arrangements are needed to improve the quality of American elementary and secondary education?

Educational Inquiry, Incorporated
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October 15, 1971

ORGANIZATION OF THE REPORT

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SCHOOLING FOR THE FUTURE

TOWARD QUALITY AND EQUALITY IN AMERICAN PRECOLLEGIATE EDUCATION

ABSTRACT

Educational Innovation

John I. Goodlad

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ABSTRACT

Quality and Equality in American Education

The prime problems of American education for the 1970's are providing quality and equality of educational opportunity. The concepts of equality guiding development and expansion of the common school in this country are not sustained in practice. For many, the schooling required for appropriate entry into the labor force is not free in any real sense; a common curriculum does not meet individual and special group needs; the population of the common school is not diversified; and equality based on local considerations no longer applies.

With respect to quality, there is a formidable gap between reasonable expectations for schooling based on responsible recommendations for what is desirable, going back for as long as 70 years, and what actually goes on in the schools. The schools do not have a precise sense of purpose; principles of learning are not used effectively in instructional activities; there is only modest provision for individual differences among students; instruction consists largely of teachers telling and questioning; textbooks predominate as the medium of instruction; the total class is the basic learning group; student interests rank low as a basis for selecting school activities; the curriculum is not adequately balanced; and organizational procedures are geared to a rigid lock-step.

During the past fifteen years in particular, innovations have been directed at relieving all of these internal conditions of the schools and more. They have not been conspicuously successful, largely for two reasons. First, they have not been directed at the crippling, contextual problems surrounding the

schools. Second, they have been implemented with limited understanding of their intent and singly, rather than in systems of change directed at the interlocking array of problems to be confronted.

We have reached a point in time when education and schooling can be reconstructed--and, indeed, they can be reconstructed--only through an interrelated array of changes and change processes, each viable in its own right. It is to such a systemic approach to change that this report is directed.

The Changing Context and Its Implications

The formal educational system is faced with replacing old practices with better ones and responding to new or vastly exacerbated societal conditions. Metropolitanism has expanded; urban decay runs rampant, and the problems of inner city schooling grow more severe. There are staggering communications problems: in processing information, in individuals and groups understanding or even hearing each other, and in employing extant means of communications effectively. The costs of schooling have expanded in double-edged fashion: the costs in the cities have increased more than three times as rapidly as the property tax base; some districts easily provide five times the dollars for schooling than do other districts, often located close by. Change itself is a powerful factor in modern living, dislocating and intimidating many people while challenging others.

The schools largely reflect these conditions; they cannot turn them around. Therefore, educational reform must be accompanied by social reform of a much larger scale. Inner-city housing must be relocated to outer areas of sufficient space to provide for human ecology. Slum areas at the center of the city must be replaced by planned cultural, educational, recreational, and certain kinds of business and commercial facilities. Most inner city schools must be closed and removed. School districts' lines must be redrawn so as to spread urban, suburban and intermediate resources across a pie- or cone-shaped district, narrow at the inner city but fanned out at the periphery. Toll-free, rapid transit systems must connect, like spokes of a wheel, the inner hub to the open spaces at the periphery.

Then, education must be conceived much more broadly, the transportation systems providing access for all to the schools, museums, industries, courts, parks, galleries, and special instructional centers scattered along them. Electronic multimedia communications systems must not only inform all residents in the metropolitan complex regarding the full range of educational activities available, but also must provide instructional terminals or consoles (with feedback mechanisms) in homes, schools, and other educational facilities. There must be national, regional, state and perhaps local educational policy planning centers looking into tomorrow and planning the implications of future projections so that our educational systems do not once again become anachronistic.

Educational Aims and Means

We appear to lack the common core of values that once served to hold together families, generations, and different socio-economic classes. It would be a mistake to seek to search into the past in order to reconstruct this core. Rather, we need a valuing of the richness in diversity now and potentially characterizing American society. In addition, we need an awareness of that mankind culture shared by all peoples of the world.

Consequently, any restatement of overarching aims for education in the United States must include the following: To develop in each individual (1) respect for and critical understanding of his own cultural roots; (2) respect for and critical understanding of an array of cultural patterns; (3) critical powers of evaluation in the realm of cultural patterns; and (4) a personal value orientation. To assure that these are more than pious statements of altruistic intent, the entire community as school must provide access to learning opportunities designed for each aim: in one's own culture, in other cultures, in the mankind culture, and in processes of valuing.

There is at this time an enormous waste in unrecognized, underdeveloped, or withered talent. Therefore, our nation-wide commitment to education must include the aim of developing at least one talent in each individual. Fulfilling this commitment calls for a unique collaboration between the school and all those cultural, technical, and business or industrial resources of the community. These resources must be brought to the school but, even more important, the school must be brought to them. Such a conception and accompanying reality calls for widespread reform of the school itself.

School Reform

Space limitations prevent development of supporting arguments for the following emphases and reforms within the school or directly bearing upon it.

1. There must be an informed national dialogue, initiated and stimulated

by the White House, about what American education should seek to accomplish. Such a dialogue must be accompanied by local dialogue on the functions of the individual school and how these functions might be best fulfilled.

2. These dialogues should be directed, in part, toward shifting school emphasis from covering bodies of content to helping students learn how to learn.

3. The curriculum of elementary and secondary education must be re-examined from top to bottom with a view to ridding what is irrelevant and repetitious. Out of such re-examination and subsequent restructuring must come a better balance among the arts, natural sciences, social sciences, and humanistic studies. Some of the content removed must be replaced with content drawn from our own black, Mexican-American, Indian, and other groups and from all cultures of the world.

4. Steps must be taken over the next decade to provide optional schooling at age four, with an accompanying reduction of two years from what is now elementary and secondary schooling.

5. The resulting twelve years of schooling should be divided into phases, each approximately three years in length, each with precisely defined functions, each nongraded, and each taught by teams of persons, not all of whom would be certified teachers.

6. In addition to fulfilling defined functions, the staff of each phase also must seek to identify and develop to the utmost degree some skill or talent in each student, drawing from the resources of the larger educational community as appropriate.

7. The planning taking place in these phases must assure involvement of

each student in several basic curriculum designs: organized around academic disciplines, social problems, student interests, integrations of subject matter, etc. Similarly, the conduct of each phase must provide for each student to be involved in and to utilize a full range of learning modes: lectures, large and small group discussions, team work in projects, individualized activity, and the like. Emphasis on textbooks must be replaced by use of a wide array of instructional media: tapes, records, film strips, audio-visual cartridges, objects to be manipulated and reconstructed, etc.

8. In order to provide instructional resources for the kind of schooling envisioned here, the school must be extended into the community and community resources must come into the school. School must be thought of more as a concept than a place.

9. Secondary school students, for example, must have access to work-study programs, to periods of work without school, and to internships in several vocational alternatives, all this achieved largely through collaboration between school and government, industry, and commercial establishments.

10. Given the envisioned diversity of educational opportunity and experience, the school's central role, from bottom to top, must be an integrative one, developing all those basic techniques of gathering and analyzing information, making critical judgments, and formulating personal positions and decisions.

11. It is essential that the federal government, city school systems, educational research and development agencies, foundations, and the communications industry design educational programs for the very young that bring children and parents together in common learning activities.

12. Family centers must be established wherein prospective parents receive appropriate pre-natal help and, subsequently, fathers and mothers join health and educational personnel in programs of early childhood education. Continuation of children in these centers beyond the age of four proposed for beginning school would be an available option.

13. It is essential that there be established and maintained a substantial national effort in research and development concerning early learning, early educational programs, and the preparation of personnel for educating young children.

14. Many of these recommendations point toward alternative patterns or options of early education, two or three subsequent phases of schooling tied closely to the educational resources of the community, and a widening of options for adolescents and young adults to include school, school and work, work, and participation in a range of vocations or cultural pursuits.

The Design of Educational Change

Many of the specific changes recommended here have been proposed before but usually not in concert. Where implementation has occurred, it usually has been of just a few changes rather than of a comprehensive system of them. It becomes apparent that the necessary corollary of what to change is how to change the schools toward desired ends.

For adequate reconstruction to take place, we contend that the following conditions must prevail more or less simultaneously:

1. The federal commitment to educational improvement must be more

to strategies for effecting change than to specific, focused innovations. Part of this commitment must be to studies of existing conditions, including factors impeding change; of alternative systems for effecting change; of substance and process at all levels of decision-making for education; and of procedures for disseminating and implementing the results of such studies.

2. Federal aid for education must be directed not only at providing a nation-wide floor of support but also at the specific needs created by increasing divergence in equality of educational opportunity. Local communities will move most reluctantly and stubbornly toward, for example, sharing their property tax resources with less fortunate communities. Therefore, federal allocations must serve to pick up some of the burden and to improve educational quality while school district lines are being redrawn locally so as to share property tax resources.

3. The ultimate locus of educational reform is the local school. It is here that it all must be put together. It is here that the community dialogue about school functions must be focused. And it is on the school as a whole that the staff must focus in discussing school problems, making decisions about how to attack these problems, implementing plans, and evaluating their effects.

4. The individual school requires external reference points, ideas and resources from elsewhere, support and reassurance from beyond the local situation, and some sense of partnership in a worthwhile undertaking. Therefore, we propose the creation of leagues or consortia of cooperating schools, each with a center or hub serving some of the requirements of individual schools noted above.

5. Each school in the league must grapple with its own problems, the staff and community representatives seeking to become largely self-sufficient in problem-solving. The hub aids communication, serving to bring together principals and teachers from cooperating schools around common problems. Each school, aided by the league as a whole, reaches out for the help it needs, more often than not to other schools and the hub comprising the league itself.

6. In-service education is focused on what is required for each school and each instructional person in that school to function effectively. A core of professional teachers is hired full-time, with approximately nine months' time each year devoted to teaching and two months' to school and self-improvement, time and schedules being arranged to fit local needs. College or university "courses" are provided at the request of schools or each league as a unit. However, most teacher updating is secured at "pedagogical service stations" established for short periods of time and staffed largely by teachers from schools in the league.

7. We propose that state and federal resources be combined in the creation of intermediate agencies (between school systems and colleges or universities) charged with both pre-service and in-service teacher education. In effect, these are larger hubs serving from ten to twenty leagues, depending on population density and the size of the geographic area. The prime purpose of these agencies is to conduct pre-service teacher education, using both university and school personnel. Ultimately, however, they assist in establishing pedagogical service stations, in training leadership personnel, and in preparing prototype materials for individualized instruction.

8. Each of the areas served by an intermediate agency is to maintain at least one school created and maintained for experimentation and for educational invention. The effectiveness of such schools will be judged solely against these functions. They will not be required to demonstrate. Rather, they will be linked from time to time with demonstration "sister" schools for developing new ideas in regular school situations. Then such linkages will be broken so as to permit the experimental school to return full-time to its basic function.

9. Multimedia communications systems must be developed for purposes of linking league schools to each other and their hubs, hubs to each other, intermediate agencies to the several leagues serviced, and the demonstration schools to the total network. Ultimately, these communications systems will include access to all educational agencies and facilities in the geographic area served by each intermediate agency. Studies of the way in which ideas are or are not diffused through the system and implemented in the programs of local schools become appropriate activity for the federal government.

10. Within this total system, the federal government should encourage development of alternate educational institutions designed for specific functions and satisfying specified criteria. These will be, most commonly, parts of educational programs which will become available to complete or enrich public school programs. Hence, they might offer instruction in the arts, religion, individualized sports, the operation of vehicles, the history and characteristics of certain cultures, sensitivity to other individuals and groups, or exotic languages. Schools are thus left with less diversified curricula but with access to the programs required to satisfy individual student interests.

11. The general direction for federal intervention in promoting educational change, then, is to encourage creation of leagues of schools, self-help procedures in individual schools through use of such leagues, dissemination of ideas among schools, procedures of self-evaluation, creation of experimental schools, development of alternative educational resources in the private sector, and improved means of communication within systems of educational change.

Institutional Arrangements for Education

The schools cannot reform themselves alone, either individually or in concert with other schools. They must be aided in the essential process of self-reform by supportive federal, state, and local arrangements for education. They must be aided, too, by the private sector, particularly the communications industry, by the responsible way in which the teaching profession matures, and by a supportive citizenry. Many segments of this supporting framework are missing or defective. We propose the following:

1. There should be either a separate federal Department of Education or, if a structure of super-departments is created, a division of education equivalent in status to the other divisions making up this department. In this latter arrangement, an Assistant Secretary for Education would report directly to the Secretary of this super-department.

2. The Department of Education should contain both the present Office of Education and the National Institute of Education, with the former re-named to suggest its development and service functions and with most of its present research functions transferred to the latter.

3. To assure an appropriate interplay between the federal government and the states, the Secretary of Education should be advised by a Board of State Commissioners.

4. To provide access to and dialogue with local, state, and federal bodies in education, there should be established at each level advisory councils representing industry, parent groups, unions, and certain special interest groups.

5. The post of State Commissioner of Education must be expanded in concept and function so as to provide coordination of all pre-collegiate educational resources in the state, not merely the schools.

6. Likewise, at the local level, the post of superintendent of schools must be redesigned so that the incumbent is Commissioner of Community Education, coordinating the entire range of educational services and facilities. Assistant Commissioners for Schools then assume responsibility for managing the school portion of the whole.

7. As proposed earlier, the present divisions between urban, suburban, and in-between school districts must be eliminated through the creation of pie- or cone-shaped districts embracing all three, in an effort designed to equalize educational opportunity and create new constellations of collaborating schools.

8. Schools are to be linked across cones through leagues of cooperating schools, as proposed earlier, for purposes of stimulating change.

9. Teachers are to have access to pedagogical service stations in any cone, whether or not part of the administrative district in which the station is located.

10. Likewise, the intermediate agencies described earlier are to cut across all cones in a large, metropolitan area, drawing upon and coordinating the resources of schools and colleges alike in providing teacher education programs and services, instructional materials, and communication.

11. These intermediate agencies might or might not be central learning-resource centers providing both computerized information regarding all available educational activities and computerized instructional programs beamed to local receiving centers and television sets. For the present, we urge the independent emergence of these centers but possible later merging with the intermediate educational agencies always should be kept open as a possible alternative structure.

12. The administrator (Assistant Commissioner for Schools) of each cone-shaped district is to be advised by a Cone Council consisting of students, parents, and teachers.

13. Teacher education is to be conducted both by the intermediate agencies and the pedagogical service stations. The latter are of an ad hoc nature, providing short-term in-service education for experienced teachers who require new knowledge or training in new skills. They are to be staffed primarily by teachers who have recognized competence in the area of demand and be maintained only until the demand is diminished through provision of training. At the outset, at least, the intermediate agencies are to concentrate on pre-service teacher education, contracting with school systems for clinical personnel and universities for academic personnel needed in instruction. Funds are to be provided from both federal and state governments. We are not prepared to recom-

mend whether these funds are to go directly to intermediate agencies approved by the state or be distributed among these agencies, school systems, and the universities specifically for teacher education purposes.

14. The structure of teacher education is to be changed fundamentally so that future teachers are placed first as aids in several changing schools, assuming increased responsibility as interns and, ultimately, resident teachers. Salary resources of school districts are to be divided, through differentiated staffing, so that prospective teachers will be paid a small but increasing amount for their service to teams. The time period from beginning to ultimate approval as a certified teacher will be, on the average, approximately three years. Licensing is not to be commensurate with receiving a job but is to constitute the ultimate formal requirement for teaching anywhere in the United States.

15. The license or certificate is to be granted on the basis of demonstrated performance. We are aware of the complications involved in such a procedure but strongly recommend that serious study of the problems and experimentation with various approaches begin at once.

16. One of our major arguments for team teaching and differentiated staffing now becomes apparent. We believe that team teaching has educational advantages for students, especially in the range of instructional resources made available. In addition, however, it facilitates the approaches to teacher education recommended here; in fact, what we propose can be effected only through team teaching.

Also, differentiated staffing creates a framework for coping with what is likely to become one of our most difficult problems in seeking to both improve and finance the schools. Most of the present costs of schooling are in teacher salaries (in fact, some states legislate the proportion to be so allocated). Both improving teacher salaries and retaining the present ratio of pupils to fully certified teachers places us on a collision course for tomorrow. Also, it is questionable that the hundreds of thousands of teachers required under such an arrangement can be provided at a quality level.

We believe it is necessary, therefore, to change radically the way school staffs are structured and financed. We envision a top-quality professional (with in-service training beyond the pre-service training described above) coordinating an instructional team of perhaps 150 children. This would be the highest paid "master" teacher, with mean salaries at today's dollar value at least double present mean salaries. Thus, such a teacher would have the combined salary of two teachers today. The rest of the salary budget normally allocated for 150 children would go to aides, interns, and less-than-master-level teachers. And, of course, the teaching team would be made up in part of student and parent volunteers.

We hope that funds presently available for teacher salaries and increases commensurate with whatever growth in the economy occurs will continue to prevail. More than this, however, we look to infusion of funds into other parts of the educational system and its supporting framework. What we recommend cannot be accomplished without federal, state, and local commitment to education. And without that commitment, quality and equality of educational opportunity will continue to wither.

President's Commission on School Finance

Part I

Schooling 1980
Toward Quality and Equality in American Precollegiate Education
(A Summary)

by

John I. Goodlad

PURPOSE OF REPORT

This report is written in response to a question posed by the President's Commission on School Finance: "What changes in purposes, procedures or instructional arrangements are needed to improve the quality of American elementary and secondary education?" It seeks to do the following: (a) identify the central problems, issues, and directions of American education to 1980 and beyond; (b) project a reasonably attainable set of conditions and changes to be achieved for coping with these problems, issues, and directions; (c) articulate strategies for maintaining continuing change; and (d) propose structural arrangements to support desired changes and strategies. The focus is on metropolitan settings.

The report is divided into two parts. In Part I we attempt to integrate, in a more abbreviated form, the essential arguments, proposals, and recommendations of Part II. Footnotes, extensive documentation, and elaboration of recommendations are eschewed in favor of synthesis and, above all, in an effort to juxtapose related ideas and proposals. There are, from time to time, cross-references to specific sections of Part II. Part II, in turn, is divided into four task force reports: A - Education in 2000; B - Education and Schooling in 1980; C - Strategies for Change; D - Institutional Arrangements in 1980. The report is written so that the reader may stop with Part I, referring to Part II for more details as necessary.

Several themes will become explicit, perhaps to the point of repetition, as the report unfolds. Clearly, they represent values and choices among alternatives. The intent of these choices often is more important than the specific recommendations emanating from them. Frequently, several alternative recommendations could be formulated from our arguments. The reader is urged, therefore, to concentrate on intent, reasons, and visions, rather than on recommendations, since these often are confined and restrained by imagination, language, space, and time.

But there are other equally important themes which may not be explicit, representing, frequently, a deeper layer of values and positions. First, there are dark clouds as well as blue sky ahead, though futurists sometimes reveal only the stars. Many of the problems we have now will continue to be problems in 1980 and 2000. Second, one thing that we can be sure about in the future is that there will be change. Coping with change is endless. Third, the rate of change for the next 25 years is unlikely to exceed the rate of change for the past 25 years. But this still adds up to a great deal of change. Fourth, man has enormous abilities and potentialities for determining his own fate. But unless he utilizes them exceedingly well, the clouds are likely to move across presently visible portions of blue sky. Fifth, however uncertain the future may be, planning for it is absolutely essential. We must use whatever best data and hunches are available, even while we systematically seek to get more and better data and sounder interpretation. Sixth, in planning it is imperative that education be differentiated from social engineering. Education is the long-term answer to mankind's problems and must not be called upon in the here and now to clear up slums, retard the spread of disease, provide jobs, or stop wars. These are tasks for social engineering, which can utilize the knowledge and skills that education has already provided.

And, finally, although we have profound faith in education, we anticipate neither quick changes nor an innovation of such power as to rectify our educational shortcomings. If we continue in our shortsighted efforts to mount an ad hoc change here, an innovation there, the decade from 1972 to 1982 will be even less productive than the previous one in improving the quality of elementary and secondary education. Similarly, simple faith in the goodness of education, of the kind that so often and effectively motivated quantitative development in American education in the past, will not suffice. No longer is expansion the mark of accomplishment. Improving quality in educational programs and equality in educational opportunity is the name of the game.

There is little by way of any specific proposal that is new in this report. In fact, most of what is proposed here is being tried or is even well established somewhere in the fifty states. Almost invariably, however, what is being tried is being carried out in isolation from most of the other elements of educational progress essential to its success. Almost invariably, too, what now appears to be a promising innovation soon will be an indistinguishable part of an enormous pile of educational baggage to be counted, sorted, and carried along, using the tired, out-worn methods and conveyances of the past.

We believe that both education and schooling can be designed, conducted, and supported so as to be dynamic and productive. But for them to become so will require that we throw away pieces that have become virtually sacred in some quarters, that we radically redesign some other portions, and that we introduce new ones. But the process must not be piecemeal. We have gone that route with limited success and discouraging failure. We must conceptualize a much larger educational whole--both education broadly conceived and schooling--manipulate several pieces of this whole simultaneously, and effect each change with full awareness of its relationship to larger wholes and other pieces. Education and schooling are systems, not collections of discrete parts. And education and schooling are, for the most part, people. Unless people, lots of people, change in the process of efforts to improve, education and schooling will remain as they are.

It is our hope that any unique contribution of this report lies in its development of a reasonably comprehensive design for change involving substance, process, and context, each revealed and treated in its own right, but all interrelated to the extent the two-dimensional page and our personal abilities permit.

QUALITY AND EQUALITY: INTERPRETATIONS

The problems confronting American education for the next decade and on toward 2000 pertain to providing quality educational programs and equality of educational opportunity. The two are intimately related. There is little point in extending opportunities to attend school to previously deprived groups when there are serious doubts about the worth of that schooling. There is little point in extending school opportunities downward unless that schooling is highly relevant to the needs and abilities of the younger group. There is little point to extending the school year just to provide more of the same. Equality of educational opportunity today and tomorrow means open access, throughout a life-span, to educational pursuits seen as relevant and desirable by each individual in our society.

For there to be enough seats at the educational dining table available to whomever wishes to be seated is one essential. For there to be quality fare in adequate variety is another. We are concerned here with both, as well as with the whole array of reasons why some at the table are unable to partake of the food. We are concerned with the provision of conditions that foster individual freedom to learn, and freedom to learn encompasses not only schooling but also access to channels that fulfill educational interests going beyond the offerings of school systems.

There is growing evidence that the schools--a significant part of the total range of educational resources available--are foundering. A very few years ago, we feared for the quality of schooling only in the inner city. Most urban schools were rapidly assuming only a holding operation, with their high rates of transiency and truancy and severe problems of maintaining order in the classroom Increasingly, however, schools everywhere are being questioned: for innocuous content, for lack of rigor, for permissiveness, for restrictive rules and regulations, for being custodial rather than educational, for failing to challenge and excite the students, for not having a clear sense of purpose. Some critics would reconstruct the schools; some would create alternatives; others would abolish schools completely. The remedies are widely disparate, reflecting the range of diagnoses.

On one thing most careful observers agree. A large segment of our population is deeply concerned about the quality of our schools, "quality" referring here to both opportunity for access and the adequacy of what is provided. There is a profound and significant difference between today's concern and that of the late '50's when Sputnik provoked educational reform. Educational innovation has been the name of the game for fifteen years, and especially during the '60's. But the schools appear to have lost ground. Following Sputnik, we believed that some updating of content, some shift in the balance of the school curriculum, would cure what ailed us. Our schools always had served us well; they had gone just a little soft. But now we are not so sure that the schools *can* serve us well. A little oil there, a few adjustments here, a little more rigor, or a little more permissiveness will not suffice.

The interlocking sets of conditions present us with what can be accurately described as an educational crisis, however overworked that term may be. First, we carry into the future a legacy of unaccomplished educational change. In some ways, we are worse off than we were before "The Education Decade" of 1957-1967, in that the changes needed are "old hat" to many people but have not been effected. Some of the best ideas look a little tired and worn. And yet, the problems of our time compel us to make them work. This is a decade for implementation, for effecting change, not merely for posing more tantalizing innovations. Second, the crushing financial weight of providing quality schools, especially in the inner city, compounds an already gloomy picture of inequality of educational opportunity. Third, the times are changing. The schools are overburdened with old ways, with practices that should have been changed and thrown out during earlier decades. But now there are fresh challenges to education to be met. The schools alone cannot meet them. More comprehensive educational systems, with the schools as a part of them, must be devised.

The years ahead and their implications for education are examined in the next section of Part I. In this next section, we shall provide a general treatment of the societal context of education and several rather broad, sweeping recommendations. In subsequent sections we shall carry several of the arguments farther and provide recommendations which elaborate on these initial ones. Consequently, treatment will proceed in spiral fashion, with initial ideas and arguments reappearing in different contexts and recommendations serving, often, to buttress more general recommendations formulated earlier in the report. To repeat, the comprehensive, interrelated character of proposals for reconstructing American schooling and education is of far greater importance than any single change or set of focused changes.

THE EMERGING CONTEXT FOR EDUCATION AND SCHOOLING

Difficulty in predicting the future rises in large part out of our inability to predict how successful man will be in coping with problems which, clearly, will grow worse unless man intervenes in powerful ways. Futurists disagree, too, on the magnitude of tomorrow's problems. For example, population predictions for the United States by 2000 range from a low of 220 million to a high of 340. Nonetheless, it is possible to talk and to plan meaningfully for an array of problems with which we must cope. A few appearing to have singular significance for the goals, context, and structure of education and schooling are selected here. (See Part II, Section A, for a more comprehensive treatment.)

Urbanization

It is clear that urbanization will continue to increase, perhaps 60 per cent or more of our total population living in highly concentrated megalopolises by the year 2000. It is equally clear that modern technological know-how is capable of providing efficient transportation and communication for linking people, institutions, and services in these megalopolises.

Assuming that these technological advances occur, it is entirely realistic to assume a community-wide concept of education, within which the schools constitute only one institution in an array of institutions providing educational opportunities from conception to death. Education is a day-long, year-long, life-long process within which traditional schooling occupies only a little time and place. Either the concept of schooling must become as broad as that of education or the place of schooling in the whole of education must be precisely defined.

We recommend that the broad concept of education, rather than the narrow one of schooling, guide all planning for human learning. This means that metropolitan planning for transportation must be guided by much more than the need to transport people to and from work and schools. It must facilitate the ready access of all residents within a defined geographic area to all of the educational/cultural resources of that and adjacent communities. Factories, businesses, museums, athletic fields, libraries, art galleries, and more are part of these resources, as are the schools.

Communications

It is clear that a field likely to accelerate rapidly, in utilization and application as well as technological development, is communications. Compared with what is possible, we have advanced only a little in synthesizing the various media into a unified system. We have a television set here, a cassette audio device there, and a computer terminal somewhere else. But the capability of unifying all these--and more--is with us technologically and requires only commercial adaptation. This is imminent. Consequently, educational planning no longer can proceed rationally without considering the most appropriate medium for achieving goals: human or machine teacher or some combination of the two; school or home learning centers or both; community learning centers offering all possible combinations of human and machine instruction.

The business community possesses the technological capability for creating what is suggested here. But it seems to lack both the comprehensive plan for what is required and the initiative for effecting it. Some combination of both federal and local agencies and the private sector is called for.

We recommend that the federal government take the initiative in creating model educational communities in which multi-media approaches are combined with conventional educational facilities and resources for comprehensive community education. This means providing capital for initial development. It means, also, creating a legal structure to assure subsequent protection of the public interest, as has been found necessary in regard to maintaining channels for educational television. And it means establishing a representative planning unit capable of effecting the essential collaborations. The potential market for goods and services is sufficiently strong to assure the self-sustaining mechanisms of private capital once initial pump-priming has taken place. But more is at stake than money. Consequently, the federal government, in cooperation with local officials, must bear heavy responsibility for creating a framework likely to serve and protect the public into the future.

Costs of Schooling

It is clear that the cost of providing quality schooling, as we have perceived and conducted schooling using traditional methods of financial support, is and will be prohibitive. This statement holds even for an affluent nation enjoying peace. It is clear, likewise, that without drastic intervention the problems of financing the schools will severely restrict access to learning for certain segments of our people, especially within the inner city. Those most needing the best schools will be able to provide only the poorest. These are statements of current fact, not prediction. The condition will grow worse; its direction will be difficult to reverse. The reversal cannot be effected by the cities alone.

Several aspects of what is happening in the inner city need to be juxtaposed. First, the cost of maintaining adequate living conditions cannot be borne by individual home and apartment owners and will not be borne, recent history shows, by landlords, many of them absentees. Second, limited space in relation to population virtually denies provision of conditions suitable for human habitation. Third, the bulk of residents see themselves as transient, and, consequently, have no commitment to improving the situation. Fourth, in general, the population at the urban center is declining. Fifth, the cost of providing adequate schooling at the urban center is higher than elsewhere. Sixth, the cost of providing minimal schooling in the inner city is increasing several times more rapidly than is the property tax-base required for support. Seventh, the people who work in the city but live elsewhere (and support schools elsewhere) are only minimally concerned about any of these problems.

Like the problem of racial segregation in schools facing the Supreme

Court of the United States in 1954, these are problems that must be dealt with nationwide, at a higher level than local authority. The recent California Supreme Court ruling on the unconstitutionality of the present property tax support of public education is a case in point and an example of the road to be followed.

We recommend that all appropriate branches of the federal government intervene, within appropriate responsibilities of each branch, to stimulate, encourage, and support the following actions and developments: The re-location of inner city housing to outer areas of sufficient space to provide for human ecology; the closing of inner city schools; the replacement of slum areas with planned cultural, educational, business and commercial facilities; the redrawing of school district boundaries to provide pie- or cone-shaped units defining slices of territory encompassing what are now separate urban, suburban, and intermediate districts; the development of rapid, toll-free, public transit systems connecting, like spokes of a wheel, the inner hub to the open spaces at the periphery. We have more to say later in this report about the educational components of this design.

In recent years, we have relied heavily on the schools to remedy society's ills. We have almost destroyed them in the process, without remedying the problems. Bussing arrangements, so-called compensatory education programs, and the like, important though they may be and have been as temporary palliatives, are, nonetheless, just that--temporary palliatives. The problems lie deeper, deeper, deeper in the basic structure of our society as it has emerged. The remedies must reach the deeper strata. Drastic, expensive social engineering is called for. Drastic and expensive though the necessary steps may be, we have the choice of either taking them or witnessing the rapid destruction of our society, with all the inevitable turmoil and misery. We have no choice.

Change

It is clear that change itself is a formidable part of our social context for education, alternately challenging and threatening, intimidating and stimulating. Changes in transportation, communications, and the general condition of man's environment are highly visible to anyone who chooses to reflect on a few years of his life or to look about. These may not be the changes that create our most serious adjustment problems. Other changes are more subtle, and include a decline in religious faith, increased instability in family life, changing view and practices of marriage, decline in a core of values, shifting job patterns and accompanying obsolescence of personal skills. For many people, all of this adds up to culture shock: to inertia at times when acting or preparing to act are called for, to ennui, to ill-defined feelings of dissatisfaction, to alienation. For some people, it adds up to challenge and opportunity

The rhetoric about change has far exceeded in intensity and scope both engineering and educational effort to cope with it or to plan for it. We know very little of a specific sort about human reaction to change; about how various personalities respond to rapid change; about how to prepare for change or to prepare others for change. The schools have emphasized the past, ignored the present, and, to a great degree, eschewed the future. The need to plan and to intervene in the course of man's future on a large scale is not incompatible with cultivating individuality nor with creating a wider range of individual alternatives.

Our course for the future is that of centralizing for the common weal on the one hand and decentralizing for individual welfare on the other. The matter of what decisions should be made by whom at centralized levels of authority is itself one of anticipated rapid change, a matter to be approached experimentally. Most of the social and environmental context within which men and women live defies individual efforts to reconstruct it. The tasks are formidable and intimidating. The brain-power, money, and leverage needed for appraising the future, designing and selecting alternatives, and mounting the attack transcend individual capability. In fact, our most urgent problems demand a mankind approach rather than a national one.

The directions to be followed in dealing constructively with change itself suggest several different kinds and levels of recommendations. First, continuous planning for tomorrow, extending ten to fifty years into the future, must be assumed by the creation of autonomous, national policy planning centers devoted specifically to this purpose. Second, there must be sweeping decentralization in regard to the formulation of regulations affecting the individual as well as in regard to opportunities for participating in the decision-making process. Third, there must be educational opportunity, broadly defined, for each person to secure the individual help he needs in coming to grips with his own problems of alienation and inadequacy. Fourth, the curriculum of the schools must be drastically overhauled with a view to replacing repetitive and out-worn content with content of much greater human significance and replacing one-way pedagogical processes with opportunities to solve problems and to think. Accompanying all of these must be research into the planning of social and educational policy, decision-making roles, the effects of various kinds of legislation, the nature and nurturing of human adjustment, and the curriculum of the schools. All of these directions are reinforced by subsequent discussion and recommendations.

Before turning more specifically to education and the schools, however, several cautions about the centralization/decentralization balance are in order. National planning centers must be capable of enlisting the best minds and be assured continuing support, with budgetary time spans cutting across the time of any given President or Congress. They must operate with a high level of autonomy, be given the objectivity and independence required for serving, frequently, as a conscience for the nation and collectively, with similar bodies in other nations, as a conscience for mankind. Several centers, rather than one, in all-embracing fields such as education are recommended both to discourage bureaucratic rigidity and to encourage diversity in approach and viewpoint. No policy center should attempt to staff for all eventualities, but should "contract out" to specialized, private agencies. In some fields, such as education, having unique local concerns, there should be parallel state policy planning centers.

Many people will conjure up an image of "Big Brother," coolly calculating and then creating our individual futures. Certainly, the potentiality is there. There are checks and balances in our democratic system--some of them seriously deficient because of negligence or corruption--and these could be made to work effectively. But this subject requires a different report. It is essential to realize that we are addressing ourselves to a comprehensive system of change, not several rather isolated changes. Consequently, the move toward centralization in some aspects of human existence must be accompanied by at least an equally encompassing shift toward decentralization in many others. A central problem today is that the individual seeks desperately for self-realization but has neither sufficient alternatives nor knowledge about the alternatives that do exist. Further, much of his personal anxiety and frustration arise out of being unable to change any of this. Escape to a natural, romantic world is a fantasy in which almost all of us indulge from time to time. But many are finding out that the reality is as chimerical as the dream. Failure to plan a better world is fast destroying the opportunity to live in any world, to say nothing of the opportunity to live there as one would like.

Summary of Implications for Education and Schooling

Anticipated societal changes suggest directions for change in education and schooling. There must be one or several national centers for planning educational policy. There must be federal infusion of funds to assure a nationwide floor of educational opportunity so that our shifting population will not be penalized merely because of place of abode. There must be categorical infusion of funds to promote and support local re-planning of school districts along lines that local authorities cannot readily follow unaided. Education must be conceived and designed so as to encompass all agencies having the potential to contribute. The federal government must engage in pump-priming activities involving funds, brains, and political leverage for the purpose of coupling institutions and media into comprehensive educational networks.

The limitations of the school as an educational institution must be recognized and the school's role in relation to other educational agencies much more precisely defined. The school must differentiate and provide for purposes pertaining to the social imperatives with which all must cope, on one hand, and the personal electives to be fostered individually, on the other. The school curriculum is now cluttered with content and activities that promote neither. Consequently, a first order of business is identifying and shucking off useless or minimally useful baggage to find room for the new. A corollary agenda item is sharpening the goals and developing the alternatives and strategies by means of which this essential process of shedding and replacing will be self-sustaining. And all our educational institutions together must grapple with questions of value, morality, personal life style, and the balance of group and individual freedoms, questions that have been largely taboo, not because of their irrelevance but because of their very centrality.

THE SOCIAL CONTEXT OF EDUCATION

In a dynamic society there is invariably a gap between where that society perceives itself to be and some concept, however implicit, of where it would like to be. Although there may be much disagreement about present conditions and goals, there is enough consensus, if the society is energetic, to allow progress toward closing the gap. In the process of examining the discrepancy, new goals can be formulated and additional shortcomings can be perceived. In a sense, then, the existence of a gap between where a society thinks it is and where it would like to be is a good thing. Without such a gap, society can become static and its individuals can become smug, self-satisfied, and complacent.

Fortunately, our society is not static and its individuals are not smug, self-satisfied, and complacent. The gap does exist and we, the members of society, know that it exists. Thus, our task is clear; we must deliberately begin to devise ways to traverse that gap. More specifically, our first task is that of securing some functional consensus on goals and present conditions. Our second is in identifying causal relationships between present problems and future solutions and, subsequently, of projecting and staying long enough with appropriate remedies. For example, as stated earlier, in recent years we have tended to allocate to education, and especially to schools, responsibility for correcting ailments that are only marginally amenable to educational influence. As a consequence, problems have become compounded; we have become disillusioned about education and schooling; and, the societal gap widens dangerously.

It is imperative, therefore, to identify what might be termed "the education gap" and, subsequently, "the schooling gap" with a view to projecting both promising reforms, and by conspicuous omission, implying what education and schools should not be called upon to do.

The Education Gap: Values

Elements of our current and impending education gap are explicit in Part II, particularly the reports of Task Forces A and B. We appear to lack the relatively large core of values that once served to hold together families, generations, and different classes of workers or levels of socio-economic class. Immigrants changed their names, restrained themselves in expressing contrary views, and even altered their appearance in order to fit in, gain acceptance, and secure jobs. Those who differed most and were least amenable to change suffered most. Those who differed in color from the white majority suffered most of all.

Visitors to our shores frequently remark that, rather than having no core of values, we have a tradition of values which is articulated over and over again. Rather than not having values, we are preoccupied with our inability to live up to them or with them. Therefore, it may be that it is not the absence of a core of values but the inability to live in [illegible], which has become the basis for our malaise. Given this diagnosis, the remedy lies not only in a search for and a clarification of values, but also in the re-orientation (perhaps re-education) of the individual toward values, and of course, toward himself.

This is not the time to search the past for an array of values on which we might find consensus, nor to appoint a Commission on Values. It may be, however, a time to think seriously about the cultural enrichment we have ignored by encouraging, in the name of assimilation, immigrant peoples to Americanize their home cultures by shedding all [illegible] might retard that assimilation. As a consequence, we have denied ourselves the enrichment that might have come from African, Asian and Latin American cultures and, for that matter, those European cultures that were not predominantly Anglo-Saxon. The only core of values worth seeking for tomorrow is a mankind core which transcends nations and cultures. Such a core has to do with decency, honesty, and humanity in dealing with members of the human race to which we all belong. There is enormous strength to be gained from understanding and exploring not only the central elements of many cultures, but also the overarching mankind elements which are capable of binding human beings together.

We recommend that our traditional aims of education be broadened, enriched, and reinterpreted in light of the above brief analysis. Any statement of overarching aims for education in the United States of America must include at least the following components, or some reasonably parallel formulations, in regard to values: (1) To develop in each individual the deepest possible respect for and critical understanding and appreciation of his own cultural roots and their associated value patterns; (2) To develop in each individual the deepest possible respect for and critical understanding and appreciation of an array of cultural patterns making up the universe of mankind; (3) To develop in each individual the critical powers of evaluation about the results of cultural patterns and a personal orientation toward values and value systems.

These aims imply that there must be provisions for persons of various races, religions, and ethnic groups to secure education (not indoctrination) in the root tenets of these backgrounds and persuasions. But it also means that these provisions must be accessible to persons of any race, religion, and ethnic group.

It is unrealistic to assume that what we now know as school will provide the range of provisions required. It is quite realistic to assume that educational communities should and will provide them. Likewise, it is appropriate to assume that some of the time now spent in school will be allocated to them. From our perspective, the attainment of aim number 3, understanding of cultural patterns and a personal value system, is a legitimate function for the school. *Therefore,* *we further recommend substantial curricular revision designed to provide time, purpose, subject matter, and instructional processes appropriate to the attainment of these aims.* These provisions need not, in fact should not, be confined to schools.

The Education Gap: Individual Potential

Just as we as a people are deeply concerned about the value problem, we are preoccupied with inadequate development of individual potential. The gap is both educational and more broadly socio-economic. Some human potential is not realized because it has no chance to begin the long course of development. The environment does not merely fail to sustain development; it stultifies it. Some human potential gets started but never matures. There is neither recognition nor encouragement of the budding talent; without reinforcements, it falters. Some human potential matures without adequate honing and refinement. Neither models nor instruction are provided for it and the full development of human potential requires more than individual talent. Some human potential is simply killed off, not as swiftly and deliberately as war does away with an [illegible] [illegible] of the youth, but just as surely. Some of these outrageous things occur because the right to learn is not yet an avowed national goal, let alone an assured, protected reality for all.

Nonetheless, some solid progress in the development of individual human potential is being made and this report endorses certain promising educational directions. These include day care centers, Head Start programs, Upward Bound, and the like. But these are just little pockets of greenery, little oases in an otherwise barren landscape. The large, central thrust of our educational system is toward a relatively narrow set of expectations and provisions for all. In planning and conducting our educational programs, we have not yet taken seriously, either individuality or the development of individual human potential.

Therefore, we recommend that our nation-wide commitments include the aim of developing in each individual some talent or skill likely to provide for him a richer life, a greater possibility for self-fulfillment. No doubt this recommendation sounds repetitious. Perhaps, but the intent is quite clear and attainment calls for something different from what we have done in the past. We are not speaking simply of individualizing instruction within the narrow confines of what is now school, important though this is. We are calling for assurance that each child will receive, under public auspices, the opportunity and encouragement to become proficient in art, music, drama, writing or some vocational pursuit--that each will develop a talent or a marketable skill or both.

This does not necessarily mean a sudden broadening of the school curriculum, although that probably would be a good thing. Nor does it mean the expensive construction and maintenance of vocational/technical schools. At this point in time, more such schools probably does not constitute a good investment. Rather, it means collaboration among the cultural (artists, writers, composers), industrial, technical/technological, and commercial resources of the community and the schools. Until our communities assume a greater responsibility for education, broadly conceived, they will continue to despair over their schools. What we are proposing calls for, of course, fundamental reorganization of the school itself.

REFORMS IN SCHOOLING

On preceding pages, we have sought to re-interpret the two traditional aims for education—individual development and cultural adaptation—within the context of present and immediate future requirements. While these aims are timeless, the specifics of achieving them are not.

On succeeding pages, we suggest some of the changes needed in internal aspects of schooling: curriculum, organization, instruction. These changes are called for, in part, because of the education gap. But, they are called for, too, because of the schooling gap—the gap between reasonable expectations for our schools and where they are, in our judgment, at this time. Rather than listing the characteristics of this gap separately, we have tied together both analysis of the gap and recommendations.

Curriculum

Achieving the re-interpreted aims of education calls for including in the curriculum of the schools substantial provision for the study of cultures in addition to our own. We no longer need to inculcate only a small, central core of common culture, responding to the fear that incoming groups will give us only a bewildering profusion of cultural differences. That period in our history is behind us. We need to enrich our present by drawing from the new indigenous cultures that survived assimilation and from the richness the rest of the world has to offer.

There is room in the present curriculum of the schools. Much of the social studies curriculum of the primary years, for example, contains subject-matter to which the child is exposed much more effectively in the community or by television. Later, topics pertaining to our past and to our Anglo-Saxon roots are repeated several times in the curriculum.

We recommend that the school curriculum be re-examined from top to bottom with a view to ridding it of what is irrelevant and repetitious, replacing such content with cultural studies drawn from our own black, Mexican-American, Indian, and other groups and from all the cultures of the world.

But studies of cultures must rise above sectionalism and sectarianism. *Therefore, we recommend that "mankind" studies be introduced at all levels of the school program.* Such studies would focus on what makes man human and how he can become more so; on what all mankind shares; on the dangers to survival of mankind rising out of pollution, population growth, war, and like miseries. Such studies would include not only new content but also re-examination of old content from this broad mankind perspective with emphasis on basic human values in the interactional instructional process itself.

It was stated earlier that students, regardless of their personal cultural identification, might well be absented from school to secure specific cultural study in special centers and institutes not under the control of the school. The function of the school, as we view it, becomes integrative, that of interpreting these and other experiences through rigorous analytical processes. Thus, the school's role becomes one of promoting the thought processes, using all the well-established means. The school's responsibility becomes less that of "covering content" and more that of assuring that each student secures practice in problem-solving procedures, in using individual subject disciplines as the mode of inquiry, in group discussion and in individual study skills.

We recommend, then, that the prime role of the school be to teach its students how to learn, the emphasis being on thinking, mankind's unique ability and potential.

Organization and Instruction

Providing for the development of individual potential calls for both change within the school and change in the school's relationship to other institutions. In regard to the former, it means a heightened concern both for individuality and individual differences. We recommend that the elementary and secondary school be reorganized into phases, each of approximately three years' duration, each with a unique definition of function within the overall function of schooling defined above, each nongraded, and each team taught.

We propose that a precise definition of functions be made for each phase of schooling so that teachers can be prepared for them and held accountable for fulfilling these functions. We propose a time period of approximately three years (but have no quarrel with four) because it takes time to accomplish anything significant, such as acquiring fundamentally new behaviors, even with young children but especially with youth. Many of the problems in the field of reading, for example, rise out of the expectation that all children will learn to read reasonably well before reaching their seventh birthday. This is nonsense, especially for those children who have limited cognitive or verbal stimulation at home. But learning to read--or do a host of other things--in three years is reasonable.

This span provides time to diagnose a persistent problem, try a new approach, diagnose and try again.

We propose nongrading because of the formidable range of individual differences among children of the same age. A few five-year-olds are more like most seven-year-olds in every way. Almost all eight-year-olds are like seven-, six-, or even five-year-old children in some ways. Nongraded schools in the United States and Infant Schools in England have demonstrated that children separated by as much as three years or more in age can and do work harmoniously and are mutually helpful on common tasks. Nongrading is no longer an optional innovation for forward-looking schools. It is mandatory for all schools seeking to provide an organizational framework and a program within which individual differences among learners can be accommodated effectively.

We propose team teaching because of the need for ongoing classroom diagnosis and remediation. One teacher with a class of 25 students or more simply is too close to the processes of teaching and learning to back away from them to gain perspective. Further, there is usually no other adult available with whom to discuss problems and provide for re-arrangements in the learning environment. Team teaching facilitates achieving both a more objective perspective for teachers and a reconstruction of learning opportunities for students. While these are strong arguments for team teaching, there are more powerful ones to which we turn in another context.

Team teaching accommodates different kinds of curricular and instructional needs in successive phases of schooling. At all levels, it can be exceedingly useful for school staffs seeking to improve rigor in teaching. It is becoming increasingly apparent that teachers simply are not adequately prepared (in fact, they are scarcely prepared at all!) in pedagogy: many do not have precise goals in mind when they teach and, consequently, are only dimly aware of what are appropriate and inappropriate responses to teaching problems. Many, for example, know little about reinforcement and how to use it effectively, and "transfer of training" is simply an academic concept acquired in a psychology class and forgotten. *More could be done to upgrade the learning accomplishments of inner city children through rigorously training their teachers in these and other basic pedagogical operations than through any other single intervention mechanism, and team teaching is a viable means for upgrading the training of teachers.*

In a well developed team teaching situation of senior and junior teachers and others in training, the group readily becomes conscious of what it is attempting to do. Mutual observation and constructive criticism become a natural part of the ongoing process. Consequently, critiques of performance are not nearly as threatening as when an outside person comes in to diagnose a teacher in a self-contained classroom. More important, the team structure sets the stage for new approaches to the education of both neophyte and experienced teachers.

Team teaching and the nongraded "phases" pattern of organizing the school set the structure, then, for fulfilling a series of successive functions in the curriculum. In the lower elementary phase, it is essential that learning problems in the basic skills be diagnosed and remedied. This can be done best by the full team working on each component of the curriculum together, each observing certain children at different times, agreeing on an instructional approach, carrying it out, evaluating, and repeating the cycle. As a consequence, the functions of this phase are fulfilled over a span of from two to four years for all children. This is a version of so-called "mastery" learning now being advocated by a handful of educational psychologists. It can and does work.

In the upper elementary phase, a major need is to provide, without cutting the curriculum into several unrelated segments, competent guidance to a full range of studies: the arts, literature, mathematics, social studies, science, health, and physical education. One teacher alone in a self-contained classroom cannot provide adequately for such a range. Most teachers (8 or 9 out of 10) in the elementary school are prepared in English, history, or an array of social sciences. The curriculum of the upper elementary years, as a consequence, is language arts with a scattering of primarily social science content. Children read about science; they do not do it. Art is representing social studies cum language arts in pictures.

This situation can be rectified by staffing each elementary school with specialists in science, mathematics, and the arts to work in teams with the generalists who are really specialists in language arts and social studies. The first group of teachers is in short supply but it is possible to find one teacher in each of these fields, even if he or she must be recruited from the high schools. The specialists are not, however, to be segregated into departments but rather should become temporary leaders of each team of teachers and children when their various specialities are involved. There need not be additional costs. The number of teachers in the language arts and social studies is reduced by one each time a specialist in these areas of short supply is employed. Thus, a well-balsecond staff for a school of 600 pupils might be made up of eight teachers specialized in language arts and social studies, several of whom are highly specialized in the teaching of reading; one each in mathematics, science, art, music, health and physical education and perhaps a foreign language; and a variety of part-time specialists, interns, and aides. The budget would be no higher than it is today; with emphasis on paraprofessionals and self-instructional devices, it could be lower.

In the secondary phase of schooling, the problem is almost the opposite of that in the upper elementary phase. The school and the curriculum are chopped into a chef's salad of specialized teachers and subjects. Few persons on the staff concern themselves with the school as a social institution and with what it is doing with and to its clients. Not surprisingly, the American high school is faring badly.

We recommend, therefore, the division of the total secondary school into several small schools, each largely self-contained, with its own team of teachers, students, interns, aides, clerks, etc., but with each drawing on library, recreational opportunities, and other facilities and, of course, the entire community. Specialists in each of the major fields of study, under such an arrangement, are forced to think and act not merely in terms of their academic majors, but as teachers concerned about and involved in planning and conducting a total, comprehensive instructional program. More than in the upper elementary phase, secondary students are called upon for self-planning, total group planning, and a considerable amount of self-directed learning, some of it completely outside of the place called school.

To recapitulate, our recommendations for the reorganization of the school and our fundamentally different patterns of utilizing human and non-human instructors are not made for their own sake or to get on the bandwagon with the array of structural innovations widely touted over the past fifteen years: non-grading, team teaching, modular scheduling, self-instructional media, etc. We are recommending all of these. But we are doing so because we believe that the school can be reconstructed to become effective, that the reconstruction must take place in its every fiber, that all the fibers must and can be woven into rather different cloth, that this cloth must be combined with the cloth of the community to provide adequate educational outcomes, and that all of this can be done largely, if not entirely, by changing the way in which educational dollars are allocated. However, much of this kind of reconstruction will not be effective without drastic intervention in the social, economic, and political context surrounding and fused with educational processes. And this social engineering will cost money, a great deal of it.

Educational Reform: Problems and Recommendations

The general recommendation on curriculum set forth earlier was addressed to a need for new content to knit the elements of our oft-repeated educational areas with the substance implied by them. Adoption of the kinds of cultural studies proposed is urgent and can be done relatively quickly. But this is just a beginning. Much more curriculum reform remains to be done and this is detailed in the report of Task Force 8 in Part II of this document. However, it is imperative that we be reminded of some of the more critical problems which face us. Therefore, we wish to make the following additional recommendations.

5. The goals of schooling are vague, diverse, and buried in a general expectation for "covering" certain bodies of subject matter. They reflect a sort of delayed institutionalization of what is good and bad in the larger society. *We recommend a national dialogue concerning the aims of education and the purposes of our schools, initiated at the level of the White House and stimulated personally by the President of the United States.* The prime medium for this would be television, with the national networks being encouraged to emphasize educational themes in "talk" shows and the like, and with specific programs beamed through cable networks and local educational channels. The purpose would not be to agree upon a set of aims. It would be, rather, to get the American people *thinking* about education and what it is for. Silberman's *Crisis in the Classroom* charge of mindlessness in the schools might be applied just as readily to the society as a whole. Our people have not in recent years thought *deeply* about our schools and their thinking has not been stimulated by informed input from the communication media. The schools themselves merely reflect this general condition of mindlessness in society.

6. Running throughout the length and breadth of schooling are implicit educational objectives. However, with all levels of schooling sharing, more or less, the same set of implied objectives, there appears to be a long period of time for accomplishing them. What is everybody's business is nobody's business. And so "school keeps." As stated earlier, there needs to be for each school an explicit set of institutional objectives and for each phase within that school an explicit set of accomplishments to be achieved within a feasible time, accountability.

specified time span. Research suggests that this institutional level of goal setting is the most neglected. We recommend that each individual school, with appropriate community involvement, and each instructional team (including the parents of children in that team) define what it is about, with accompanying illustrations of what constitutes appropriate means for goal attainment. The simultaneous progression of both national and local dialogues concerned with educational goals would constitute a significant element in the needed reconstruction of schooling.

5. Topics appear and reappear from top to bottom in the school curriculum. Many of them should not be there at all, let alone be repeated several times. The topsy-turvy, largely commercially directed process of curriculum planning has been a major cause of this confusion. Furthermore, we do not even have an accurate map of the curriculum; we do not know what is being taught in the schools. Accurate description and analysis are required. We recommend the immediate financing and mounting of a study designed to describe the curriculum of the schools, to analyze its nature, to determine how it is made, to identify its needs, and to propose changes for its improvement. To avoid any charge of such a study being with another effect to set up a "national" curriculum, we recommend that the study be only partially federally supported and that it be conducted with low visibility on the part of the federal government.

6. The curriculum emphasis in the elementary school heavily favors the language arts, regardless of the subject matter label of what is currently taught. This is particularly so in schools enrolling a large proportion of disadvantaged and minority group children. Having identified the need for language

stimulation as a prime educational goal, these schools have decided that more of it is a good thing. However, rather than producing language enrichment, these schools, in reality, offer their students little more than linguistic indigestion. Economically disadvantaged children, to an even greater degree than others, need the varied stimulation of working with their hands, of singing, dancing, examining objects, performing experiments, and so on. Instead, the schools expose such children to studies which are conducted heavily through language abstractions.

We recommend that the curriculum be liberally infused with programs in the arts (including the industrial arts for all students). The curriculum should include a study of film, drama, dance, architecture, natural science (with special emphasis on ecological programs), those social sciences usually neglected in the schools (anthropology, economics, political science, sociology, law, and psychology) and contemporary humanistic studies, in addition to the arts, particularly contemporary literature. Such a curriculum reform will require a substantial infusion of funds. The support of not only the federal government but also of foundations and the communications industries will be required.

5. Not only does the current school curriculum emphasize the language arts but the literary content found in the seemingly never ending verbal exercises of the classroom has been taken from comparatively trivial primary sources and then rewritten to meet the specifications of readability charts. It is boring, tedious. One has only to sit for a few days in upper elementary classrooms to become acutely aware of the monotonous repetition of language arts studies through textbooks and accompanying written exercises, whether the subject period on the timetable is labelled natural science or social studies.

We recommend that the heavy dependence on textbooks in implementing the curriculum be reduced significantly, replacing or at least supplementing them with short, specialized paperbacks appropriate to a given subject and with an array of media, particularly tapes, film strips, sound cartridges, and displays that can be manipulated or reconstructed by students themselves. These, of course, must be combined with the variety of teaching/learning approaches proposed earlier.

Recommendations comparable to the one immediately preceding have been made again and again by commissions and task forces of state, regional, and national scope. Professional associations representing both administrative and teaching groups have lamented the dominance of textbooks in instruction. Some publishing companies have developed grandiose plans for new approaches to the development and dissemination of instructional materials. But textbooks continue to be the prime medium of instruction at all school levels above the kindergarten. This practice appears to be one of the most difficult to change.

Part of the problem lies with the rigid, graded structure of schools. Eliminating gradedness in the school for purposes of fostering more attention to individual differences in children, as proposed earlier, encourages the use of a wider array of instructional materials. So does team teaching. But other changes will be required, too—as proposed in succeeding sections of this report—if the hold of textbooks is to be broken.

6. Schools employ an extremely narrow range of curriculum designs, usually following either emphasis on the structure of the disciplines (as during the curriculum reforms of the 1960's and 1970's), or emphasis on some core

integration of disciplines (as with the social studies rather than separate social sciences). However, they tend to follow only one of these approaches for a decade or more before shifting to an alternative emphasis. As a consequence, students frequently go through both elementary and secondary school with exposure only to one curricular approach. We consider there to be much unnecessary sameness and resulting boredom in the schools.

We recommend that schools deliberately design their programs to assure the involvement of each student in four or five alternative curricular designs during the school career. These designs might be alternated vertically through the school so that the lower elementary phase emphasizes a design built of immediate social problems, the upper elementary phase a design built of integrated subjects, the junior high school phase a design built to provide practice in problem solving, and the high school phase a design built of separate academic disciplines. Or, better, each phase of schooling could employ several different designs simultaneously.

5. *Classroom instruction, at all levels, is primarily a process of teachers telling and questioning, with considerable reading and writing (often in workbooks) as follow-up activity.* Most students are passive most of the time. Since learning how to learn is an even more basic product of schooling than acquiring specific aspects of limited knowledge, we recommend that elementary and secondary schools conduct their programs so as to assure active participation of students in a full range of learning processes. These include the direction of large class discussions, solving problems in small groups, sharing complementary tasks in teams, and several approaches to individual study. The

procedures called for here fit into those recommended elsewhere in this report.

8. We pointed out earlier that home, school and, frequently, the total environment conspire to restrict and confine the development of individual talent. We recommended, in the context of national aims for education, that an individual skill or talent be developed in each person. The school tends to be oblivious to building talents that lie outside of what it traditionally has sought to cultivate. Further, some areas encompassed by the school are recognized and cultivated only minimally. The most neglected areas are the arts and humanities but it is fair to say that unusual talents even in curricular realms central to the school often languish if they are manifested in deviant ways.

We recommend that each phase of schooling assure identification of an individual talent or skill in each child or youth and provide for its appropriate development throughout that phase of schooling. The reader is reminded that elementary and secondary education, according to our plan, is to be divided into nongraded phases, each taught by a team responsible for diagnosing and instructing the students in that phase. This plan facilitates both the careful identification and development of individual talent called for in the above recommendation and the inclusion of part-time teachers on the team. These part-time teachers need not be certified to teach but must possess high-level personal ability in dance, drama, ceramics, photography, ecology, creative writing, or whatever. Obviously, the school can afford neither an extensive curriculum in all of these nor full-time persons to teach them. But, by the use of differentiated staffing, it can both include the part-time resources required and free the funds required for them.

One child might develop a single talent in great depth by concentrating on it during successive phases of schooling. Another might develop one from an early time but add an additional one in each successive phase, thus possessing an array of well-developed skills by the time he graduates from high school. These skills could be in areas normally excluded from the school curriculum, in areas normally included, or in both.

9. The arrangements proposed above do not provide adequately, however, for the freedom to learn which we believe is absolutely necessary for the concluding decades of this century. Therefore, we recommend that provision be made for bringing students to the educational resources of the community as well as for bringing instructional personnel and educational resources from the community to the school. Students should go to the studios of artists, the courts of judges, the offices of newspaper reporters, and more. They should have access to potentially educative facilities that cannot be moved about: museums, art galleries, law offices, industries, hospitals, factories, businesses, etc.

We believe that much of this two-way educational traffic can be obtained with costs only for the transportation involved, which should be provided in the educational budget. Many companies and individuals are willing to provide teaching time at no charge for the persons participating. Some schools and school districts already possess and use inventories of first-rate teaching resources available at no outlay of funds.

We must begin to think of school as a concept, not a place where information is dispensed only by full-time, certified teachers from nine to three each day. It must be viewed and conducted as a 24-hour each day process of using the entire community. This will be difficult for schools and the educators in them who have become locked into the box we know as school. It will be especially difficult for the organized teaching profession which, each year, moves toward obtaining a monopoly over teaching. There are clear signs that many citizens intend to block this move, just as there are some emerging guideposts to better directions for the profession.

10. For many students, school becomes meaningless and boring long before they leave it. For most, the transition from school to job is an abrupt one. And, for many, the need for gainful employment arises long before they reach the level of schooling required for advantageous entry into the labor market. Clearly, there is need for more options, especially between the ages of 14 and 20. The creation of these options may require relaxing existing school attendance laws, reinterpreting those on the books, or both.

We recommend the creation of work-study plans, opportunities for temporary cessation of school in favor of work, and a variety of internships outside of school designed to provide vocational education. All of these should be accomplished through collaborative arrangements between the larger community and the schools. Work-study programs provide for simultaneous employment and attendance at school. For disadvantaged economic groups, this keeps the options open for a longer period of time. For most youth, it provides a sense of personal worth; "gainful employment" is virtually essential to feelings of adequacy and potency. The opportunity to drop out meaningfully for a time is desired by more and more young people. But the doors to re-entry soon begin to close after departure. More second chances and more easily accessible return ramps are required. Young people choose their life's work from a limited base of knowledge; some fall into it by accident. A series of carefully planned internships would lead to more intelligent vocational and career planning. Our recommendation is designed to encompass all youths, not just those who fail to fit neatly into academic tracks. Many in the latter group lack the courage to defy parental expectations, know little about other pursuits, or simply are caught up in long-established patterns of reinforcement and satisfaction.

We are not recommending an expansion of vocational education of the kind that too frequently has characterized secondary education: namely, the provision of wood or metal work, auto mechanics, tailoring and the like. The school cannot provide sufficient variety; the costs are exorbitant; and the status of second-class curricular citizenship often is attached to what is offered. We are talking about using the community outside the school to conduct what it knows better how to do.

11. School is conducted as though it were the primary, if not the only, educational agency intervening in the lives of children and youth, in spite of the fact that television, for example, occupies approximately 15,000 hours during the first 18 years of life, as opposed to the school's 12,000 hours. And television may be having more impact than school, for better or for worse, during each of these instructional hours. Unfortunately we have scarcely begun to employ for educational purposes the rich array of media available, whether in school or outside of it.

We recommend that the school's curricular design encompass what might be provided educationally through utilization of the so-called communications media. We are not thinking here merely of extending the classroom teacher through use of audio-visual devices, as recommended earlier. We are thinking, once again, of school as a concept, not a place, both bringing in and reaching out for educational programs not feasible for the school we know today. This notion involves letting television sets and computer terminals, at appropriate times, substitute for the human teacher in the classroom. It also means employing programs offered at other hours, received by the home but discussed and interpreted in classes. And it means enriching the substance of programs viewed at home and school, whether or not ever discussed in class. Sesame Street offers an example of what is required but a very limited one. The phenomena of the world, human and non-human, should be available in dramatic visual and auditory form for the educational enlightenment of young and old.

This utilization of communication media will not take place in concert with schooling so long as present conceptions of "audio-visual" education prevail. The cant of this field always has been that radio, film, television, and computers serve as extensions of and not replacements for teachers. Nonsense. Students ought to interact directly with these media, unencumbered by intervention of teachers. The need for this becomes sharply apparent in considering the educational uses of computers. The computer is not just an extension of or variation on the human teacher. It is a new source of instructional energy, tireless, fully resistant to colds and hay fever, and available 24 hours out of each and every day. To place between it and the student the limited, varying energy system of the human teacher is to restrict the instructional possibilities of both.

The preceding brief analysis is designed simply to press once again for the need to break out of physical and pedagogical egg crates in search of more comprehensive systems of education. Such systems must encompass all of our educational resources so that they are fully available to all, without necessarily consulting a full-time, certified teacher or going to the place called "school."

12. Lest we appear to be denigrating the school to the point of abolishing it, we hasten to point out that the reconstructed school has a unique and significant role to play in the total system of educational opportunity. We recommend that the prime function of the school be an integrating one, seeking to effect meaningful order in the total program of children and youth and seeking to foster central human processes of securing essential information, inquiring systematically, making value judgments, and both developing and revising personal beliefs. Children and youth are to learn how to learn through all of their senses, aided by all of man's understanding of human behavior and all of his media.

Early Childhood Education

Evidence regarding the importance of early cognitive stimulation of the child has been piling up. One interpretation of this evidence is that children should be brought into the orbit of the school at an earlier age; age four has been widely recommended. We seriously question such an interpretation and such a recommendation for several reasons, at least so far as the present is concerned.

First, we already have pointed out some of the current shortcomings of existing schools and recommended extensive reconstruction. We see no point in bringing younger children into the existing school system until that system is well along with the reconstruction recommended. And, especially, we do not want to see the existing system extended downward for younger children.

Second, we have available at present only a very small nucleus of persons capable of mounting good educational programs in schools for children under the age of five. Although approximately 40 per cent of the four-year-old population is in nursery schools, the quality of these schools leaves much to be desired. Most of them are private, catering to middle and upper class families, many of which are quite capable of providing more meaningful education for their children than is found in most nursery schools.

Third, simply sending to school children who need cognitive stimulation most--those from families with low incomes--seems not to produce the desired results. Even after a year or more in nursery school or kindergarten, children from impoverished families continue to fall back in school, especially if English is spoken not at all or poorly in the home.

Needed is a strategy of early education that focuses on the entire family. Middle and upper socio-economic class parents need help--not a great deal, but some--in simple techniques for playing cognitive games and otherwise assisting in the sound development of their children. Lower socio-economic class parents need to be involved in teaching/learning situations with their children, both to learn how to help them, and to gain certain basic learnings for themselves.

The decade of the '70's must be a time of testing and developing several approaches to educating the young child, with primary emphasis on the inner city, minority groups, and the impoverished. It is for this reason that we propose the simultaneous conduct of several different kinds of activities.

We recommend the collaboration of city school systems, the federal government, foundations, educational research and development agencies, and the communications industry in developing early learning programs deliberately designed to involve the parents in learning activities for their children. The focus here is on the home. However, since major components of such programs are instructional materials and television programs, it is clear that they could and should be used, also, in nursery schools and other educational facilities. The goal is to provide a learning program for the child in which the parent is involved; parent and child come together in common endeavors geared to the child but with a clearly defined role for the parent. The returns are not merely in the cognitive development of children. They are also in bringing parents and children together in a supportive relationship.

We recommend that day-care centers be extended in number and concept. Part of this extension should focus on the child-parent relationship sought in the recommendation above. We envision here the close blending of health and educational personnel in a cooperative effort involving parents. The centers are to be close to home and, wherever possible, linked with other informal recreational and educational facilities of the community.

We recommend expansion of the research and development activity of the kind initially conceived for the National Laboratory in Early Childhood Education, with university centers engaged simultaneously in fundamental studies of early learning, the development of curricula for young children, the training of teachers, and the dissemination of findings and recommended programs. It is unfortunate that the Laboratory has languished for want of funds and a clear-cut sense of direction. In regard to knowledge about and the existence of good programs, as a consequence, we are years behind where we might otherwise have been in the field of early childhood education.

We recommend that, in terms of the development of early childhood education already recommended, there be a steady progression toward the inclusion of four-year-olds in a beginning phase of schooling embracing children from age four to age seven. This, of course, does not mean that four-year-olds attend school as it now exists; rather, that they become involved in a new concept of schooling, the phases concept described earlier. The most ambitious implementation of this recommendation would be the availability of such programs in 10 to 12 states by 1980. It must be made clear that attendance of the four-year-old in school would be voluntary and would depend, in part, on the availability of other options. A child might continue in a day-care center to the age of five, six, or more, if this seemed appropriate. At any rate, we must move as rapidly as our knowledge suggests and as rapidly as we can prepare competent personnel to have appropriate educational options available for every four-year-old by the date of his fourth birthday. Meanwhile, however, educational programs involving children and parents together must be made available from the time of birth, with initial priorities established for disadvantaged groups in our society.

The School Years

We recommend that the goal be set for this dacade of adding one year of schooling at the bottom and cutting two from the top. The recommendation regarding availability of educational opportunity comparable to "school" by the age of four is part of a proposal for reconstructing the school years. As we know, there is much repetition of content throughout the grades. In a nongraded structure, as recommended, this repetition could be eliminated and many students would be more appropriately placed in college by the age of sixteen. And, in place of formal schooling we have proposed work-study options for the adolescent years. There is no good reason why the present formal structure of schooling cannot be cut, advantageously, by a year or two.

The result would be four nongraded phases of schooling of approximately three years each, beginning at age four and concluding at 16. However, some children would move into it out of various early childhood options at five or six and, of course, there would be great variation in the ages of children and youth attending later phases. It is quite conceivable that young people ranging in age from 13 to 18 would be participating in common learning activities. Following the reduced time span of college recommended by the Carnegie Commission on Higher Education, the mode for graduating from college could readily range from age 19 to 22.

Many of the things we recommend have been proposed before. Most already exist, but in relative isolation from other components of the total combination of changes required. We have sought to portray a comprehensive design of what education and schooling would look like if at least their major components were reconstructed. The design for effecting needed changes must be equally comprehensive. To this task we now turn.

STRATEGIES FOR CHANGE

Until very recently, efforts to improve American education have focused more on the what to change than on the how to change. Innovation was the name of the game during the 1960's. But innovation did not have the desired effect of visibly improving the schools. In fact, our schools appeared to lose ground, especially in the inner cities. Clearly, how to effect constructive change is a problem deserving study and attack.

Our own studies and analysis of other inquiries lead us to conclude that many of the ideas proposed for schooling during the 1960's are worth implementing. These have been gathered together on preceding pages. We are convinced that the recommended changes must be put forward as a system and not individually. Likewise, we are convinced that change processes must be systematic, focused simultaneously on many components of the educational enterprise. We offer the following twelve proposals to bring about change. These proposals must be viewed together, not individually. The rationales for the change strategies proposed are presented in Part II, Report of Task Force C, and are referred to here only briefly or not at all.

1. The stance of the federal government toward change must be a systematic one. Consequently, funding efforts must be directed to an interrelated array of changes and to change strategies by means of which a system of changes is to be effected. We recommend that the federal government support studies into present conditions of education and schooling and especially into factors impeding change; and that it support studies of alternative strategies for effecting change. We also recommend that the federal government support both studies into decision-making processes in education at federal, state, and local levels and studies into multi-dimensional ways of disseminating information about what and how to change in education.

2. The quality of education children receive depends in large measure on where they live and, ultimately, educational changes are to be made where the children are. Unfortunately, discrepancies in ability to support schooling very widely among geographic regions and neighboring sectors of metropolitan areas. As an initial measure, it is essential that the federal government intervene in providing a nation-wide floor of support for education. We recommend, however, that the federal government provide, in addition to this general aid, categorical support for local plans designed to share property tax resources. Wealthy districts are unlikely to share their school funds from property taxation with their less fortunate inner city neighbors. But, as we point out in the concluding section of this report, they must. Some of the pain will be eased if the federal government picks up part of this burden and seeks to improve educational quality while school district lines are being redrawn.

3. Ultimately, all of our efforts to improve schooling must focus on the local school. It is here that any national dialogue about schooling finds tangible expression. Change strategies for the future must focus on the individual school, making it stronger and relating it to educational resources of the larger community. We recommend that the single school, rather than the school system or the individual teacher, be the key unit for efforts designed to improve American education.

4. Current in-service teacher education programs tend to take teachers away from the school and its problems. Consequently, there is in only a very few schools a critical mass of persons engaged seriously in studying and remedying problems of the school as a whole. Children, parents, and teachers should

be joined in making the school an exciting, viable educational institution. We recommend that educational change strategies include plans for stimulating in each school processes of dialogue, decision-making, action based on decisions, and evaluation focused on self-improvement of the school as a social institution. In essence, the purpose is to develop in each school a group of persons committed to and capable of maintaining a continuing process of self-improvement.

5. It is clear, however, that engendering such change oriented processes is exceedingly difficult. Local school groups need ideas from elsewhere, the example of valued reference groups, external support and encouragement, and a feeling of participation in an enterprise that can make a difference. We recommend, therefore, that changing schools be joined in consortia or leagues of schools designed to provide these conditions for each participating school.

Such leagues should be organized around a set of agreements and arrangements likely to be conducive to their effective operation. High in priority among these is considerable decentralization of decision-making authority to permit local schools to determine their course of direction and to permit teachers to make instructional decisions. It is necessary, also, to create a hub or communications center through which ideas can flow readily from school to school. Such a hub could serve to bring together groups from the schools with special interests to find resources to serve these interests.

The league concept of school improvement is a shift away from the traditional models of change which emphasize experts "doing something" to eager teachers toward a concept of self-help. Individual schools can learn to solve their own problems, to seek help wherever they can get it, and to use the hub of communication for this purpose. The notion of self-help can prevail, not just in an individual school but in a league as an entity, in a league of diverse schools capable of providing assistance to each other.

6. A different concept of in-service education than has commonly prevailed must accompany the concept of self-help. Instead of being focused heavily on courses in neighboring colleges and universities, in-service teacher education must grow directly out of the problems encountered by the faculty members in seeking to improve their school and by individuals seeking to improve their teaching skills. School districts must recognize this shift in emphasis and give appropriate credit for such activity. We recommend that local school districts maintain "pedagogical service stations" organized on an ad hoc basis to provide the immediate educational upgrading which is related to the expressed needs of teachers. These "pedagogical service stations" are to be staffed for short periods of time by teachers competent in the skills required and released temporarily from classroom duty to provide such service. Likewise, teachers are to be released temporarily from their teams to take advantage of what is being offered, so long as it relates directly to an educational need as identified by the staff as a whole. In the course of a year, each member of a school staff might take advantage of a pedagogical service station, each one in a different set of activities.

7. A major block to educational change is that teachers simply cannot teach every day and then, in a late afternoon meeting each month or even each week, reconstruct the curriculum or the organization of the school. Time for overall planning must be built into the annual schedule. We recommend, there-

fore, that full-time members of teaching teams be employed on a full-year basis, with approximately nine months' time devoted to teaching and two months' to planning. This recognizes the fact that only some members of a teaching team are full-time personnel. These are the persons on whom the long-term welfare of the school depends. Each individual school faculty should determine for itself how the two months of planning time for part of the staff is to be distributed. It could be distributed in a scheme of alternating teaching and planning or could be concentrated into the summer months. This use of teacher time is a significant step toward the day when some teachers will be spending most of their time planning lessons for audio-visual cassettes projected to terminals electronically.

8. Pre-service teacher education is conducted far too remotely from the actual conduct of schooling. Even in the practice portion of teacher education programs, there usually is a certain artificiality about the process; the prospective teacher is a guest in a teacher's classroom rather than a partner or team member. Courses in education tend to be built up in the traditional way, around accumulations of knowledge rather than around the realities of schooling. It is difficult or impossible for schools of education to hire clinical personnel and, when they do, these persons gradually lose their clinical expertise. Universities have one set of expectations; public schools have quite another. Both have something to contribute to the education of teachers.

We recommend that intermediate agencies for teacher education to coordinate the resources of both public school systems and colleges or universities be created. These agencies are to be established independently of both public school systems and colleges or universities and are to be approved for teacher education by the state. Initially, at least, the federal government, the state, and private foundations should contribute the funds to establish these agencies. These initial efforts should be exploratory and experimental; different approaches and arrangements should be tried and evaluated. We are not prepared to recommend precisely how funds should be distributed; this problem, too, should be approached experimentally. We favor as a beginning, however, allocation of funds to the intermediate agencies within a framework of guidelines to be established. These agencies will then sub-contract with both colleges and school systems for personnel beyond those of the agencies' professional staffs.

It is reasonable to envision a growing role for these intermediate agencies. They might provide, for example, services to the hubs of as many as 10 or 20 leagues of schools. They might provide training for the directors of these hubs. They might also manage a network of pedagogical service stations cutting across leagues of schools and school district boundaries. They might include instructional materials centers and, ultimately, the development of prototype curriculum materials. Very early, they must take on the task of developing criteria for and methods of appraising teacher performance.

9. Although new educational ideas emerge naturally out of the process of keeping school, they rarely receive in regular school settings the refinement and development required. Therefore, we recommend the creation of schools maintained solely for purposes of innovation and experimentation. These schools must be independent of local finance and control and, therefore, must be financed by the federal government and/or foundations. They are not to be for teacher education; intermediate agencies working with leagues of schools are to serve

that function. They are to be looked to for the generation and development of new ideas and the experimental testing of alternative school models and techniques.

10. The innovative and experimental schools are not to be demonstration centers, however, although they will serve that function for brief periods of time. Rather, we recommend the creation of demonstration schools whose function is the exemplary development of some experimentally tested idea or concept. These are to be supported by local school districts or privately. Some funds for their initial beginnings should come from the federal government and philanthropic foundations.

From time to time, experimental schools will be linked temporarily with demonstration "sister schools" for purposes of moving ideas from the experimental to the demonstration stage. But this relationship will be broken off as soon as possible in order to enable the experimental school to return to its central function. Normally, the experimental school will not have observers other than theorists and researchers interested in the explorations of these schools. The experimental school will convey to the demonstration school a readiness to transmit ideas or models for development to the demonstration level.

11. We do not wish to imply that all schooling and education are to be conducted under public auspices. Earlier, we have set forth several recommendations for collaboration with the private sector and, in fact, have proposed a concept of schooling that necessitates such collaboration. At the same time, however, we are not proposing a general movement to alternative free schools separated from public auspices and controls. We see the unique role of the school as being an integrative one, helping children and youth to make sense out of diverse experiences. We do not believe that this is likely to occur in schools organized around predetermined philosophies or sectional beliefs. We think that there is still a place for a common school in American society. We recommend, therefore, the creation of partial educational alternatives in the private sector. There would be, then, an array of private facilities or institutions offering instruction in any activity of sufficient interest or demand to warrant its reasonably economic provision.

Such a scheme fits into our earlier recommendations regarding the school seeking to use the educational resources of the entire community, either by bringing them to the students or by sending students to them. It permits the school to maintain a reasonably cohesive, balanced program as recommended earlier in this report. But such a scheme also enables the school to serve individual needs, interests, and talents by encouraging use of these alternative educational opportunities.

Financing might very well take place through a modified use of vouchers. Thus, perhaps 25 per cent of a child's "school" time is to be spent with alternative programs outside of school. His family would receive vouchers of sufficient value to pay for this portion of his education. Clearly, the per cent of time to be covered by vouchers would vary widely at various stages of individual development. In order to be approved for support through vouchers, the various partial programs would be required to meet criteria established and supervised by the state.

We believe the plan recommended here to be superior to the "total schooling" voucher plan in which parental option (and parental ignorance and perhaps tyranny) play such a large part. This nation has passed child labor laws in part devised to protect children from their parents. A general voucher plan could very well turn back the clock of history, requiring us to pass "child education laws" for the same protective purposes.

We recognize the degree of tyranny in the present conduct of schooling. This report is directed toward eliminating some of that tyranny. We also recognize, however, that there is a great deal of misplaced romantic idealism in most of the alternatives to schooling so far suggested. Unfortunately, our problems of schooling are not solved simply by condemning and closing the schools as inhumane places while romanticizing all other possibilities. Nor is there any point simply in substituting one form of tyranny for another. We must seek to reconstruct our schools and educational systems, introducing where we can the many useful ideas now in search of congenial homes.

12. We conclude this section on change strategies by looking briefly to the possibilities of electronic communications and educational systems. Obviously, effective functioning of the proposed network of leagues of schools and their hubs, pedagogical service stations, intermediate agencies, and experimental and demonstration schools would be vastly enhanced through the availability of two-way, audio-visual communications systems. We recommend the development of multimedia centers created initially for maintaining effective communication among components of the recommended change system but developed subsequently for a second function of delivering educational programs.

A block to educational change is the lapsed time from research and ideas to implementation or, for that matter, from creative individual practice to wide-scale utilization. Another is the difficulty teachers have in actually seeing practices they otherwise only hear about. An audio-visual system of the kind needed is technologically feasible. It simply has to be put together so that teachers trying new procedures may talk to others who have used them or may watch demonstrations without physically going to them. Similarly, teachers need quick access to the hub serving their league of schools for references, materials, and information about the like interests of other teachers.

What we have in mind has the potentiality for providing, also, educational services of other kinds. For example, an educational communications installation serving a metropolitan area might well be a center for all the cultural and educational activities of that area. Simply by turning to a designated television channel, anyone could have access to a complete list of available resources. Similarly, such a center might develop its own educational programs, releasing them to schools, homes, and other educational institutions through CATV. Thus, a complete educational system could be a network combining public schools, partial programs maintained in the private sector, different kinds of service agencies, and electronic educational programs and communications services.

The communications system proposed here has many self-sustaining features and certainly has some investment attractiveness for industry. However, it will be necessary for the federal government to provide pump-priming funds for initiation of the recommended centers and systems. Subsequently, the costs should be borne by industry, federal and state governments, and the schools themselves.

We have proposed strategies for change involving many component parts, all interrelated. At least two features should be made very explicit, features which should be present in proposals calling for federal funds. First, traditional patterns of intervening "for somebody else's good" are largely replaced by patterns of self-help and mutual support. Schools and teachers are viewed less as targets for the change agent and more as energy systems quite capable of solving problems and being self-motivating. Federal intervention, then, should seek to capitalize on these abilities, stimulating and encouraging potentiality for self-help wherever it is thought to exist. Second, most of the human resources for improving schools exist within the schools themselves. These resources need to be mobilized and encouraged. One way to do this is to link together schools and the people in them for mutual support and the sharing of ideas. This is the simple but powerful idea behind our proposal for creating leagues of cooperating schools. The rest of the strategy lies in providing specialized resources and communication so that groups with concerns in common and something to give to each other can be brought together. We believe that, within such systems and structures, ideas will move relatively quickly from concept to practice.

INSTITUTIONAL ARRANGEMENTS FOR EDUCATIONAL IMPROVEMENT

Even with full utilization of the self-help and mutual support strategies of the kind recommended on preceding pages, the schools cannot reform themselves alone, either individually or in concert with other schools. They must be aided in the essential process of self-reform by supportive federal, state, and local arrangements for education. They must be aided, too, by the private sector (particularly the communications industry), by a responsible and mature teaching profession, and by a supportive citizenry. Unfortunately, today, many segments of this supportive framework are missing or defective. (For an extensive analysis of this framework, see the report of Task Force D, Part II.)

The problem of adequate support and leadership begins at the federal level. Traditionally, educational policy has been a state matter, not a federal responsibility. In modern times, the space breakthrough of the U. S. S. R. in 1957 alerted us all too traumatically to the need for national priorities in education. But the top federal position in education, that of the United States Commissioner, is a relatively low-level office depending uncertainly on personal charisma of the Commissioner for influence. We recommend establishment of a Department of Education or, if super-departments in a reorganized cabinet are to exist, a Division of Education equivalent in status to the other divisions of that department.

It is ironic that most other countries recognize the national importance of education through maintaining ministries of education but that the United States does not. There is no need to put forward an array of arguments for this recommendation. It has been made many times by responsible bodies, most recently (1970) by the White House Conference on Children. Budget alone would justify such a move. Currently, the budget of the U. S. O. E., only one unit of the Department of Health, Education, and Welfare, exceeds that of four other cabinet-level departments. The Department of Education should contain both the present Office of Education and the National Institute of Education which, we assume, is to be created shortly. The former probably should be renamed to suggest its service and development functions. Most of its present research functions and activity should be transferred to the N. I. E.

The relationship of the federal government to the states with respect to educational affairs always has been uncertain and unclear. This relationship, as a consequence, has not been unmarked by suspicion and distrust. Decisions as to whether or not to channel federal funds through the states, by way of their departments of education, to the schools have been made as often as not on the basis of political expediency rather than educational welfare. We recommend the creation of a Board of State Commissioners to advise the Secretary of Education. The activities and staff work required for effective operation of this board are to be financed from federal funds.

In part because of the lack of any sustained system of advisement on and participation in educational affairs at the national level, there is an undue amount of jockeying and lobbying by various specialized segments of the population. Education and the schools suffer accordingly. This same problem is replicated at state and local levels of decision-making. To provide access to and dialogue with local, state, and federal bodies in education, we recommend the establishment, at each of these levels, of advisory councils representing industry, parents, unions and certain special interest groups.

Throughout this report, we have stated or implied the necessity for education to be conceived broadly so that the American people can draw not only upon the schools but upon many other sources and institutions to secure the education they need and want. This concept has been expressed many times before and endorsed in many places. But the school continues in relative isolation from the rest of our educational resources. This condition will not be remedied easily and certainly not by single solutions. Many changes will be required, some symbolic and some much more penetrating.

One of these changes is for top school positions at state and local levels to be converted into educational positions drawing upon and coordinating all the relevant resources in the state or community. We recommend, therefore, that the top state post always be identified as that of State Commissioner of Education and that it be expanded in concept and function so as to embrace all precollegiate educational resources in the state. Likewise, we recommend that the post of superintendent of schools, at the local level, be redefined and redesigned so that the incumbent is designated City or Community or Metropolitan Commissioner of Education, and that he be held responsible for coordinating the entire range of available educational services and facilities. The schools then can become part of these services under the administration of an Assistant Commissioner for Schools.

We have spoken earlier in this report about the severe discrepancies among the various regions and sections of metropolitan complexes in this country in their ability to support education. From 1930 to 1960, the cost of schooling increased 330 per cent but the average increase in the property tax base in cities was 97 per cent. Although it costs more to provide the same level of schooling in the city, suburban communities frequently are capable of providing five times the support in taxation at no greater cost to the taxpayers. Differences in where one lives and in one's socio-economic status create profound inequalities in educational opportunity.

We recommend that school district boundaries be redrawn in cone- or wedge-shaped patterns extending outward from the inner city, narrow at the center but widening toward the periphery. Each district so created will embrace territory in the inner city, in the suburbs, and in-between, and will be, consequently, integrated by race and socio-economic levels. Such a district will share the total property tax base for schooling throughout the area encompassed.

Implementation of such an arrangement will be resisted, particularly by suburban taxpayers. We are assuming, however, that alternatives to the property tax base are being recommended by the President's Commission on School Finance. These alternatives, presumably, will provide resources in additon to those secured from property taxation and, consequently, will make it possible for the level of funding now available for suburban districts to be applied throughout the newly-drawn districts without unduly penalizing suburban taxpayers.

The relevance of our earlier recommendations on revitalizing the inner city, transportation systems, and communications now becomes apparent. The narrow portion of each cone will be close to the cultural resources at the heart of the city. Schools, warehouses, and all but a few business enterprises will have been removed. There will be apartments for older persons but all family residences will be found toward the wider portions of the cone. A toll-free transportation system, with lines fanning outward like spokes of a wheel, will take persons of all ages both outward and inward to the educational and cultural resources spread along it. At the center, one will step from the computer-operated vehicle to conveyer belts, if the distances are too great for walking.

We also begin to see how partial educational centers and programs will be used. Students will be in schools for varying proportions of time, depending on age and other factors. Likewise, they will use their vouchers to buy varying portions of instruction from the array of private facilities and arrangements available. There will be no such thing as "bussing." Everyone will move about to get the education he needs.

The communications network proposed earlier will link places and people in, across, and around school district lines. Communications need pay little attention to mandated boundaries. Consequently, everything that can be programmed to be seen or heard, theoretically (and, for the most part, actually), will be available to everyone, regardless of color, race, age, religion, or place of abode.

With respect to schools and teachers, the transportation system will ficilitate teacher attendance at any pedagogical service station in the metropolitan complex. The topics available and the schedule will readily be accessible by consulting a computer print-out. Likewise, the audio-visual communications network will link schools within leagues, league hubs to other hubs, and intermediate agencies to the whole. Meanwhile, this communications system will increasingly develop educational software for projection to homes and educational facilities.

These projections, joined with earlier projections in this report, are merely suggestive of the way in which change can beget change if an overall conception of what is possible and desirable can guide the successive steps of developing such a scheme. It is neither economical nor technically (and perhaps politically) feasible to move immediately to full implementation of such a scheme. While we have discussed what can be done now to effect change by depending heavily on existing structures, for change to be accelerated, these larger schematic developments will be required. The costs of such development must not be charged to education alone, since these are developments proposed for the entire fabric of our society.

The involvement of citizens in local decision-making is exceedingly important, especially when the structural changes needed in society as a whole appear to be so far beyond individual participation. Advances in our technological capability tend to cause many persons to feel impotent. However, much of the quality of daily living depends on what one's neighbor does, on how the local school is operated, and the like. We recommend that the administrator (Assistant Commissioner for Schools) of each cone-shaped district be advised by a Cone Council consisting of students, parents, and teachers. This group would concern itself with all aspects of how the schools are serving their clients, of abuses in operation of partial programs in the private sector, of distribution of students by schools, and the like.

As proposed earlier, there also are to be Local School Councils concentrating on the goals, functions, and activities of each school. The prime criteria for judging the school--and this would be a function of the Local School Councils--are the adequacy of common core experience for all within the school and the adequacy of individual, specialized opportunity, particularly through access to resources beyond the school.

A major area for structural change in schooling is teacher education. Our previous recommendations urge that in-service teacher education focus on problems of the school as a whole and on the ongoing instructional enterprise conducted by teachers in teams. There must be time allotted (two months each year is recommended) for total school planning, revision, and curriculum development and for teachers to secure, on-the-job, the updating and upgrading of skills required for effective performance. Consequently, there must be, at the district level, recognition and support for total staff dialogue, decisions, action, and evaluation regarding school problems and for individual teachers to take time for attendance at pedagogical service stations. Ironically, our public schools, which so desperately need reform, probably constitute the largest industry in the nation not providing for the retraining of its personnel on the time and at the cost of the industry.

However, these recommendations are only part of a larger proposal for restructuring the training and utilization of teachers. The intermediate agencies proposed earlier are new institutions, combining the resources of colleges and school systems for teacher education and closing the gap between them. Future teachers are to be placed from the beginning of their professional training as members of teams. They are to receive small stipends which increase in size with their increased ability to assume responsibility. They are to be evaluated on the basis of their performance in the total range of activities involved not only in teaching but also in improving the school as a whole. We recommend that the license to teach be granted on the basis of performance.

We grant the pitfalls and difficulties involved in such an enterprise. We fear the development and use of limited criteria and narrow tests of performance based on minuscule behaviors. We fear, particularly, the early freezing of criteria and procedures by state legislatures and departments of education. Therefore, we urge that this recommendation be approached experimentally, first with the establishment of different kinds of intermediate agencies, each charged with responsibility for developing performance criteria and the means for their implementation.

The license to teach is to be valid nation-wide. Updating will not depend on securing a higher degree or certain university credits. Rather, it will depend on securing pedagogical updating, as appropriate, in the skills and abilities requisite to the position sought. The license to teach will not necessarily assure a job. This will depend on supply and demand. And because of supply and demand, it may be necessary during times of reduced birthrates or as result of a move to take a position below that for which qualifications have been secured.

One of our major arguments for team teaching and differentiated staffing now becomes apparent. We believe that differentiated staffing has educational advantages for students, particularly in regard to identifying their learning problems and needs and providing a range of instructional resources. In addition, however, it facilitates the approaches to teacher education proposed here; in fact, what we propose can be effected only through differentiated staffing.

Differentiated staffing provides a framework within which to grapple with one of the most difficult problems of improving and financing schools. Most of the present costs of schooling are in teacher salaries. In fact, some states legislate the proportion to be so allocated. Many of those persons in full-time teaching positions have only marginal preparation (and, it is fair to say only minimal interest in teaching). Up to 70 per cent of those in some fields who actually begin to teach following graduation are no longer teaching three years later. The preparation and utilization of teachers, obviously, is a highly wasteful enterprise.

Furthermore, there are not adequate incentives and rewards for continuing in teaching, which explains why some who prepare never teach, why many others--some of them with high ability--never prepare, and why some, with high ability and preparation, leave teaching. Although beginning salary schedules are relatively good (probably too good), intermediate career salaries are not. It is fair to say that, in addition to those able and dedicated persons who remain, there are many mediocre persons who go on year after year giving modest service for modest return.

We believe that the drive of the teaching profession for a fully certified teacher in every classroom, lower pupil-teacher ratios, and markedly improved salaries is not in the best interests of the public or the teaching profession, given the structure and conditions summarized elsewhere in this report. In fact, we believe this combination of goals to be on a collision course with fiscal reality and, ultimately, public confidence. And we believe it not to be in the best interest of improved educational quality.

Given present teacher education programs, both pre-service and in-service, the salary and incentive structure, and the numbers of teachers required to staff the schools on a 25:1 ratio of pupils to teachers, the requisite number of teachers of high quality simply cannot be attracted and maintained. The choice is to muddle along with present staffing and salary patterns and accept the fact that our schools will continue to be unsatisfactory or break radically with the past and at least some of the apparent directions of the organized profession. We believe that this is not a real choice. Radical solutions are called for.

We recommend patterns of differentiated staffing designed to place one top professional in charge of a teaching team coordinating the education of up to 150 children. The salary potentials of such professional persons will be up to double today's salary figures, holding the value of today's dollar constant. Such persons will be hired on a full-year basis and will be the key figures in the continuous reconstruction of schooling recommended here. All other persons in the team will assume a variety of responsibilities other than coordinating the team and will be paid at lower salaries, according to their roles as aides, clerks, interns, residents, and the like. Teams frequently will be staffed by fully licensed personnel preparing for team coordination when such a position becomes available. We conceive an "open" system with respect to mobility, persons being able to move into new roles on the basis of training and competence.

We recommend the availability of top professional roles for coordinating vertical segments of the program, in addition to the horizontal kind of program coordination recommended above. The use of highly trained full-time specialists serving several teams in the structure of the school was described earlier. These persons would occupy roles requiring advanced professional preparation, in subject matter as well as pedagogy, and would qualify for top salaries.

As described in a preceding section of this report, up to 50 per cent of the total salary budget might go to the full-time professionals of both types; part of the remainder to various part-time personnel and persons in-training; and the balance to instructional media or to partial programs outside the school. It is anticipated, however, that resources will be redistributed rather than taken away from instruction and that the complementary educational systems recommended throughout this report will be financed from new funds allocated to American education.

A CONCLUDING COMMENT

We have endeavored throughout this report both to provide general directions for improving education and schooling and to provide a set of related proposals and processes for change. It has been necessary, in order to focus on the totality of the problem, to move quickly over many details which will enter necessarily into implementation of our recommendations. Most of these details are covered in Part II.

We hope that the thrust of our proposals will not be lost or obscured by disagreement over the wording of recommendations, symbols, or details of implementation, however important these may be. We assume that the reports of other working groups will provide what we have failed to give; it was not our task to propose either the complete restructuring of the whole of education or the specifics of financing what we have proposed. The Commission and its staff have this larger, overwhelming task to which, we trust, our report makes a contribution.

President's Commission on School Finance

Part II

Reports of Individual Task Forces

- A. Education in 2000
- B. Education and Schooling in 1980
- C. Strategies for Change
- D. Institutional Arrangements in 1980

President's Commission on School Finance

Report of Task Force A

EDUCATION IN 2000

by

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Introduction

The Charge

As members of a task force working on a sub-report for the President's Commission on Educational Finance, the authors of this document interpreted their charge in this manner. They were to analyze the changes anticipated for American society during the final quarter of this century. This analysis was to be a general look at the future in which emergent social forces, scientific and technological advances, and ecological changes--both domestic and global--were to be studied in light of their implications for education of the future.

The Task

In order to accomplish this task, the authors engaged in research and discussed their findings with each other prior to presenting their observations in writing. Research, discussion, and finally writing focused on three critical areas:

1. Social forces, including societal values for the present and the future, the family structure and the future life styles of different groups of people, attitudes toward work and leisure, implications for the economy, and possible trends in politics.

2. Science, technology, and ecology, encompassing biomedics, cybernetics, communication, transportation, as well as architecture, pollution, the population, and the world food supply.

3. Education, with special emphasis on relating possible future developments in the field to the issues raised by discussion of the above two areas.

The Report

The report which follows is divided into three sections; each section is concerned with one of the three areas described above. In each section key issues are identified and discussed with reference to a variety of sources. In addition, critical questions about each issue are raised by the authors. The last section of the report offers a challenge to education of the future, with its potential benefits and its potential difficulties, along with recommendations which may be helpful in solving, or at least in coping with, the contingencies of life in the year 2000.

A bibliography of all works consulted is provided following the conclusion of Section 3. Reference to all authors cited is provided within the text.

A Final Thought

In a very real sense, the task assigned to this task force is global. It is unfair to pretend that this report is by any means exhaustive or unusually comprehensive. However, it is hoped that this report does provide an adequate perspective from which education and its role in the year 2000 can be viewed.

SECTION I: SOCIAL FORCES IN THE YEAR 2000

Predicting the Future: The Inherent Risks

Predicting the future, at the very best, is risky business. When the object of the prediction is the production of conclusions which will be used to give direction to a course of action, the caution that must be exercised in such a business is clearly understandable. Whatever the reasons for not speculating on the future might be, however, they ultimately must be given but second thought if any rational attempt to grapple with the issues of life in the future is to be made.

There are two basic areas for speculation about the future--the domain of the empirical, hard data, scientific-technological developments and the more nebulous, perhaps strictly humanistic-philosophical domain of social forces, forces such as cultural values, social institutions, and aesthetic developments.

While there is no dearth of speculators in either domain, the hard data empirical speculations generally are more well-known; often they are the dazzling displays of science fiction, and certainly, they are more dramatic to write about. The speculations about social forces, however, have only recently become well-known, and generally they are the thoughts of, some say, querulous philosophers and other disgruntled sorts. Perhaps the recent but less popular concern with this more nebulous domain can be attributed to two factors: (1) the general discontent in society today, and (2) the great difficulty involved in saying anything at all about the non-empirical realm.

Raul de Brigard and Olaf Helmer, in their introduction to Some Potential Societal Developments--1970-2000,(10) observe this difficulty in writing about the non-technical, non-material developments of life in the future.

> Societal terminology is not as precise as physical terminology, so that in general the circumstances under which a statement would be considered true are not so clearly determined. In addition, there is a certain inevitability about many physical developments, the only question being one of the precise time at which they will come to fruition; whereas for most societal developments their occurrence or non-occurrence depends greatly on the presence and form of human intervention. Thus the future of society, factually as well as semantically, is less determinate than the future of technological progress.

Nevertheless, there is little to be gained by neglecting to speculate or by being afraid to speculate on future societal developments and their attendant problems. Although such speculation may not be marked with the inevitability of technological prediction, the potential outcomes of societal developments are worthy of serious thought; otherwise, the future use of technological advances, while being "inevitable," may be purely academic. Thus, the question of life in the future, in the non-technological as well as in the technological sense, must be addressed, not only by serious-minded scholars and popularizing pundits, but also by those individuals responsible for planning to meet the contingencies of the next thirty years. Certainly, regardless of the intellectual risks involved, such a task is not only in the domain of governmental planners and educational leaders, but also might be considered to be their duty if any direction is to be provided for preparing for life in the year 2000.

Most writers with the daring to consider life in the next thirty years from a societal-cultural point of view opt for one of two major patterns of development.

The first pattern of development reveals that life, in the non-technological sense, will not substantially differ in the year 2000 from life in the present, the 1970's. Whatever is to be thirty years from now is now in either embryonic or mature form. Any developments by the year 2000 are to be seen as the logical conclusions of trends which the more perceptive men of the 1970's observe. Thus, if there is a relatively small or new problem today, say in pollution control, it will be a bigger problem tomorrow. If there is a big problem today, and to give an example here might be too presumptuous, then there will be an even bigger, perhaps disastrous problem tomorrow.

The second option, and by far the less safe for writers concerned with the future, is the prophecy of violent or non-violent upheaval, of revolution which will clearly disassociate patterns of life in the year 2000 from patterns of life today. For the most part this later option is avoided by a majority of futurists, even if they believe that some sort of revolutionary change in society's value system, and in society's subservience to that value system, is demanded. It should not be surprising, then, to discover that most of what is written about social forces in the year 2000 has a strong sound of "now."

The ability of a society, and of the individuals in that society, to withstand any rapid movement of change reflects that society's and its individuals' adaptability to the future. There are few people today who would deny that there has been substantial change of life in the technological sense from 1900 to the present. The questions to be concerned with, then, are not has there been change, or will there be change, but how well have people adapted to change and how well they adapt to change in the future.

The Trend of the Future: Adaptation or Societal Dislocation?

Andrew Hacker(28) believes that Americans are basically adaptable people. "...Americans have adjusted: they are prepared to adapt themselves to change no matter what the substance of their transition may be." In a very real sense, Hacker's statement indicates that there is little need for concern over dramatic, dislocating change disrupting the trends of American life; a characteristic of American life is to adjust to disruption. In fact, Hacker has little patience with those writers who encourage Americans to bewail their impending social dislocations and to blame society's ills upon them. For Hacker, such a theory of social dislocation is too simple and overlooks the hardy, adjustable strains of the American character.

Margaret Mead, while hardly a heroine to those opposed to change, does offer status quo Americans some cause for optimism in suggesting that any new developments in social patterns of life are not necessarily moving toward radical change. Though indeed eschewing any nationalistic or traditional optimism, her view does build upon the present without foretelling any cultural revolution. She sees, as one of her titles notes, "The Future as the Basis for Establishing a Shared Culture." In her words,

> I would propose that we consider the future as the appropriate device for our shared world-wide culture, for the future is least compromised by partial and discrepant views. And I would choose the near future over the far future, so as to avoid as completely as possible new confusions based on partial but avowedly totalistic projections born of the ideologies of certainty, like Marxism and Leninism, or the recurrent scientific dogmatisms about the possibilities of space travel, the state of the atmosphere, or the appearance of new mutations. But men's divergent dreams of eternity might be left undisturbed, providing they did not include some immediate apocalyptic mo-

ment for the destruction of the world.

> Looking toward the future, we would start to build from the known . . . the known processes of our present knowledge, from which we shall proceed to learn more.(41)

Also offering solace to those who do not wish the future to come with any degree of revolutionary turbulence is Charles Reich. While popularly thought of as a youth-oriented defense of the anti-establishment to the establishment (indeed, Reich has become somewhat of a hero at Yale while his colleague Erich Segal of Love Story fame has felt forced to withdraw from the same institution), Reich's Greening of America(55) appears really to synthesize, through a theory of cultural evolution, the divergent views of middle America and the "hippie" movement.

Essentially, Reich traces a movement through three phases of American society: The first phase, described as Consciousness I, recalls small town, face-to-face, nineteenth century America. The second phase, Consciousness II, is the triumph of the Corporate State--that Kafkaesque bureaucratic monolith which came to maturity during the New Deal and flourished during the war and post-war wave of industrialism, spawning its side effects of open racism, continued Asian warfare, and the excessive use of power over individuals not only by the government but also by virtually every societal institution that exists. Consciousness III, the antidote to Consciousness II and the vision which disaffected youth is supposedly striving for, inevitably will come to exult in the absolute worth of every human being. The antagonistic and competitive doctrine of life associated with the Corporate State will fail to provide direction, for the mass of men and individuals will refuse to be evaluated by general standards, to be classified, and to be analyzed. Consciousness III, however, will be achieved, Reich assures his readers, not by any violent wrench in American societal values but by the certain erosion of the Corporate State and the certain growth of idealism of a youth generation which will replace today's power structure.

The seductive appeal of Reich's version of the future, obviously, lies in the fact that society really need not become overconcerned with today because, relatively painlessly, society will change for the better without realizing what has happened to it. If Reich is correct, then the future is not to be feared or, as the lyrics of a recent song by the Beatles suggest--"Let it be."

While Reich's vision of a new consciousness for America might give solace to both sides of "the generation gap," it has been criticized [as Maxine Greene notes(27)] by John Kenneth Galbraith, George Kennan, Herbert Marcuse, and John Passmore as being entirely too utopian without offering any substantial insight into a real future--with that future's many problems--which might exist by the year 2000. The idyllic picture of the future presented by Reich may ultimately, then, be little more than a placebo for a worried corporate state which (while in a show of sportsmanship must take its literary lumps with smiling good grace) needs the reassurance that youth really is not all that bad. For Reich, America has a romantic future which will inevitably come.

Despite these references to the hardiness of the American character and its adaptability to change, its optimistic hope in building a shared culture and its inevitable development into a more enlightened and idealistic consciousness, the world of the future should not be so lightly dismissed.

Among the more concerned futurists is Daniel Bell, who has chaired a group of prominent scholars investigating the future. In writing a prefatory note for Toward the Year 2000: Work in Progress, Bell reminds his readers that there are key issues which must be discussed in any projection of the future. Among these issues are:

1. The national society--the question of federal, state, and local government relationships;
2. The scope and size of a governable social unit--the question of centralization and decentralization, of what should be public and what should be private;
3. Number-density interaction--the span of comprehension, the loss of insulating space and the loss of individual privacy;
4. Systems analysis;
5. Costs--the needs for social accounts as well as economic accounts to help people;
6. Equality--the need for legal equality for all people; the need to account for genetic variation in children; the continuing meritocracy which deliberately sorts people out to make them appear more as individuals but really more subject to manipulation.(3)

Herman Kahn and Anthony Wiener, in their article "The Next 33 Years: A Framework for Speculation,"(33) chart twelve trends which will increasingly dominate any discussion of life in the future. In most respects, these trends reflect adherence to the first option available to futurists--that there is to be no radical shift from the signs evident today in the lives led tomorrow. The basic change in the next thirty-three years (these observations were made in 1967) will be the increasing university of current trends such that the visible present will become even more apparent in the future.

The trends cited by Kahn and Wiener are:

1. Increasingly sensate cultures with greater emphasis on material enjoyment;
2. Growing power of bourgeois, bureaucratic, meritocratic (hierarchical advancement by academic degrees and other social barriers), democratic, nationalistic elites. (This trend negates Reich's optimism about the arrival of Consciousness III and suggests that the power of the Corporate State is in the ascendancy, not in decline);
3. Accumulation of scientific and technological knowledge;
4. Institutionalization of change, especially research development, innovation and diffusion;
5. World-wide industrialization and modernization;
6. Increasing affluence and leisure time;
7. Population growth;
8. Decreasing importance of primary (manufacturing) occupations and increasing importance of service occupations;
9. Urbanization and the growth of megalopolises;
10. Increase in levels of literacy and education for the population;

11. Increased capability for mass destruction;

12. Increasing tempo of change.

Overall, these trends obviously do not present a set of alarmist alternatives. While not foretelling a dramatic upheaval in life for the future, they do, however, underscore the need for planners and other futurists to place their visions of tomorrow in sharper focus.

This need to place visions of the future into sharper focus is perhaps most vividly illustrated by Alvin Toffler who, in a by now highly popular book, projects the current trends of life--more calmly treated by other writers--into the unsettling societal dislocation of "future shock."(34)

While the other authors avoid any direct speculation on a wrenching cultural revolution and its attendant effects on the population, Toffler argues that society is already in the process of dislocation from its traditional culture and that it is experiencing some degree of difficulty in adjusting to the future. He points out that there is an accelerative thrust in the movement from the past and the present to the future such that many individuals simply cannot comprehend what is going on about them and wish to withdraw from a future-directed reality. For those people caught up in the future-directed thrust of life--whether they wish to acknowledge it or not--there is an unprecedented hurried pace of life to be contended with, a pace which future generations might be educated to cope with but to which the present generation must resign itself.

The faster pace of life, so much a part of the present and yet, if Toffler is correct, a fairly accurate picture of the future, can be characterized in a number of ways. In one sense, men--at least those in the affluent Western nations--will participate in a "throw-away" society in which few material goods are expected to last for any length of time. Although the non-returnable bottle is a commonplace and by now something of an ecological problem, the "throw-away" society has profounder problems to contend with: if nothing material is permanent, what is to become of the spiritual world of the immaterial?

It may very well be, as Toffler suggests, that the world of the immaterial--of values--is not only poised between cultural absolutism and cultural relativism (for even the cultural relativist, within the time a given society or individual makes a value choice, acts as though his choice were absolute) but it is also a world of cultural and societal anarchy.

Most of Toffler's book, while commenting on the more observable forms of impermanence in life--the nomadic movement of nuclear families from dwelling to dwelling at least, on the average, every three years; the reliance on individuals to do special ad hoc tasks rather than to work on total projects; the over-choice of material goods; the variety of mystic and non-mystic subcults in society, to cite but a few--ignores the ultimate societal implications of such a "future shock." Indeed, there appears to be little unifying force in today's culture. What Toffler sees as the cultural glue for society today, and presumably into the future, is a combination of passive entertainment and consumerism (although consumerism may be a sub-type of entertainment) in which the average individual is schooled to accept the ephemeral image of media (television, film, etc.) for reality and to delight in, or at least to accept, the synthetic throwaway goods in place of more traditional desirable goods.

Alienation as a Source of Social Dislocation

If the future is to be marked by such impermanence, not only in the world of material goods but also in the world of values, what are the root causes of this movement to the year 2000 and beyond? Whether the future is accepted and adapted to, as Hacker, Reich, and others suggest, or is to be greeted with "shock" as Toffler argues, is one issue. But another issue, and perhaps more important to planners and educators who must have the vision to lead society, is the more precise analysis of the societal trends in evidence today and the even more precise assessment of those trends for the future.

A dominant theme runs throughout virtually every work discussing man and the future. That theme is alienation. Unfortunately, the term "alienation" is so overused that it has become a virtually meaningless cliche. However, the mere fact that "alienation" occupies the thoughts of serious writers and is a part of the vocabulary of a large portion of the population should emphasize the importance of discussing such a concept rather than denigrate it. Even if it is true, as Hacker indicates, that most Americans really are not alienated from anything, a great number of people believe they are alienated and so the symptoms of the illness are very real, even if the disease is little more than faddish hypochondria.

Rollo May, in his Love and Will,(38) suggests that the major problem Western society faces today and, unless people can be persuaded to believe otherwise, will be a major problem into the indefinite future, is that of alienation. May first suggested alienation--the individual's sense of being cut off from all traditional sources of culture (the family, the church, and the nation) and being forced into emotional and even intellectual isolation from his fellow man--to be a psychological problem with societal implication in the late 1940's. At that time, May was scoffed at, but by now such a view is virtually an orthodox interpretation of what is "wrong" with society. May alone did not detect this "isolation" idea in man; artists like T. S. Eliot, in The Waste Land, "The Hollow Man," "The Love-Song of J. Alfred Prufrock," had perceived this phenomenon as early as the twenties. It is almost as if the malaise of the individual grew in a sort of post-World War I, post-industrial age vacuum, until, by virtue of the absence of any compelling alternative value system, the term "alienation" became the holy word to identify a creedless creed. World War II with its dramatic and very real call for national survival, plus the periodic supercharges to the older pre-1900 value systems of the various anti-Communist crusades of the past twenty years, only served as diversion from the evolution of this negative direction in a search for social values.

But what does "alienation" really mean in terms of a societal trend? May suggested that it is the glorification of the Playboy ethic in which pleasure, in an awkward, adolescent way, is to be sought but not really enjoyed. Permeating the cultural unreality of the Playboy world is the "look but don't touch" philosophy so easily epitomized by the vulgar excursions into eroticism (usually the celluloid or glossy print variety) so popular today. As May suggests, all Playboy did for the twentieth century value system was "to move the fig leaf from the genitals to the face." Such a move--while both tantalizing and yet prudentially Puritan--may be temporarily diverting but not substantially energizing in such a way as to serve as the foundation for any new value system. William F. Buckley, Jr., himself a self-styled orthodox moral absolutist, perhaps best summed up the confusion evident in the current culture when he perpetrated a "hoax ex nihilo" by fabricating supposedly highly patriotic documents--as opposed to the purloined Pentagon Papers which he believes should be discredited--and then defended himself by commenting, "We did tend to operate in something of an ethical vacuum."

It is this reference to a "vacuum," be it ethical or otherwise, perhaps more than anything else, which describes the vague value system of today's alienated, skeptical man. The very term "vacuum" implies that the world is cast adrift on a sea of metaphysical uncertainty, an uncertainty which may approach the nothingness or meaninglessness implicit in nihilism. But such an empty set of values--perhaps leading to a pessimistic paralysis for all of society--appears to be a wholly inappropriate outlook for those individuals who hope to plan for the future. A certain degree of optimism, in fact, may be essential if any goals for the future are to be generated by planners and educators.

Nevertheless, it cannot be denied that a value vacuum of some sort does exist for that group of individuals who consider themselves or are considered to be "alienated." This vacuum has been discussed by many commentators on contemporary society. Stated categorically by the Stanford research on society in the year 2000, "the metaphysic that supported the founding of the nation no longer prevails."(39)

Science and Technology: The Great Alienators?

For the most part, the absence of fixed values is attributed to the dramatic, inevitable progress of science and technology described earlier. As scientific and technical knowledge rapidly develops, there develops with it a more mechanical frame of reference, a frame of reference which puts little relevance upon intuitive, emotional, humane learning and strong emphasis on its opposite--the disembodied, scientific, and critically rational mode of thinking.

The Stanford study characterizes this new mode of thinking as being part of a new value system which can be called "mechanomorphic." The mechanomorphic value system is based upon these assumptions:

1. The true way to know something is through objective examination.
2. Trust is to be placed in impersonal over humane bases--"the scientific method," chance, legalisms, statistical frequency, etc.--for judgment in human problems.
3. There is a narrowed range of appreciated experiences--an emphasis on rational-cognitive functioning and on manual-motor actions with less significance attached to sensual, aesthetic, relational, mystical, affective, and reverential aspects of experience and to states of being and being in process.
4. There is a devaluation of life as an art, of play, of rituals and festivals, of unfettered curiosity about the unexplored, and of activities that are not useful.
5. There is an absence of a deep feeling of being a part of nature and of the evolutionary life processes.

Put another way, as Theodore Roszak[16] observes in his citation of Wordsworth:

Sweet is the lore which Nature brings;
Our meddling intellect

Mis-shapes the beauteous forms of things
We murder to dissect.

While the mechanomorphic value system of today's society may not really "murder to dissect," it does lend credence to those who define man's basic problem as that of isolated, vacuum-sterile, intellectualized alienation. Erik Erikson ["Memorandum on Youth," in Bell, 1968(1)] raises the question in the psychological-sociological realm when he asks, "Is it possible that the fabric of traditional authority has been torn so severely in the last decades that the re-establishment of certain earlier forms of convention is all but unlikely?" He offers optimism in that he believes that youth can ultimately find meaning in the world and will work things out--it can re-establish an order where humane limits with feeling are discernible.

Erich Fromm, on the other hand, is less optimistic about man's role in a mechanomorphic future in the year 2000. He observes that:

> their (people's) vision of the year 2000 is that it will be the full realization of the aspirations of man since the end of the Middle Ages, and they do not see that the year 2000 may not be the fulfillment and happy culmination of a period in which man struggled for freedom and happiness, but the beginning of a period in which man ceases to be human and becomes transformed into an unthinking and unfeeling machine.(18)

Fromm is fearful that the only direction life in the year 2000 will take is that of the "computer-man idea" which is the expression of a "flight from life and from humane experience into the mechanical and purely cerebral." Evidence of this flight into the inhuman world of mechanical-cerebral existence is underscored for Fromm by the apparent Orwellian design, evident in a computer-ruled society, which could become the model for life in the future. "Computers," Fromm writes, "should become a functional part in a life-oriented social system and not a cancer which begins to play havoc and eventually kills the system." Whatever hope for optimism there might be, Fromm notes, must take into account the following:

> Whatever the merits of the source of the validity of humanist norms, the general arm of an industrialized society can be thus defined: the change of the social, economic, and cultural life of our society in such a way that it stimulates and furthers the growth and aliveness of man rather than cripples it; that it activates the individual rather than making him passive and receptive; that our technological capacities serve man's growth. If this is to be, we must regain control over the economic and social system; man's will, guided by his reason, and by his wish for optimal aliveness, must make the decisions.

Man (not inhumane man but emotional, feeling man) making decisions about his future offers hope. But is there enough evidence in today's societal trends to indicate that man may still have the luxury of such a hope?

Certainly, there are many problems which indicate that the reasons for hope are minimal. It is fashionable--except for those with an unbounded faith in youth such as Erikson and Reich--to suggest that the opportunities for man controlling his own human destiny are rapidly diminishing.

Roszak suggests that the mechanomorphic value system may have already taken its toll.

> At best, the artistically inclined person within a predominantly scientific culture lives a schizoid existence, finding an out-of-the-way corner of his life in which to pursue some creative use of leisure time. In the technocratic society such a schizoid strategy is fast becoming a standard practice. Men build careers and shape their worlds in their public roles as technicians and specialists. They keep their creative gestures to themselves as private and irrelevant pleasures. Such gestures are a personal therapy, they help keep us a little more sane and resilient in this glum world; but men do not let such hobbies

define their professional or social identity.(56)

If a schizoid existence is the mode of living in this new value system, it can readily be understood why some men are alienated. In fact, the overwhelming demands of society to stifle the private side of human existence suggests that a mammoth problem is already existent. Alienated man is in a desperate battle to preserve his own sense of identity.

The Ideology of Individualism

Perhaps, however, it is not completely accurate to blame the computer mentality for the dehumanization and alienation of man. Andrew Hacker suggests that the symptoms of "alienation" in society are really phony symptoms. The isolation, passivity, boredom, and general discontent in society are not so much a result of the industrial age, mass emotional breakdown, national psychoses, or whatever one will, but rather traces of the basic selfishness of man in a materialistic culture who is more threatened by the loss of his individual potential for greed rather than by any outside more exotic force.

Hacker argues that contemporary American man is a victim of his own mythology--the ideology of individualism which the national state has cultivated to defend its many activities but which is now subject to be "hoisted on its own petard." The American believes and wants to believe that he is a property owner with inalienable rights equal to those of any other member of society. In a sense, modern affluent man has confused his concern for equality with his concern for liberty. In the process, he has allowed himself to be duped by those forces which preach liberty and enforce a dubious equality. In fact, very few individuals own very much; forces much larger than the individual continually press upon him such that he gets lost in his urban tangles, suffers the loss of personal privacy, is manipulated by the seductive lure of consumerism, and is pressed into a conformity on a scale far beyond his capacity to perceive it. And the reaction of man--the typical twentieth-century man--is to revere his ideology even more rather than to question it. For such a person, the word "individual," or any of its derivatives, becomes sacred. And out of this shoring up of the ideology comes, not the Consciousness III predicted by Reich in the Greening of America, but rather a movement, described by Richard Scammon and Ben Wattenberg as "the blueing of America." America, Scammon and Wattenberg suggest, will not gravitate to new solutions for the myriad problems supposedly the result of a post-industrialized alienated age but will seek to extend the dominion of the Corporate State with its devices of control over individuals for years (and decades) to come.(37)

Slater warns that the net result of the myth of individualism is that "Americans are no longer willing or able to be led."(38) The unintended irony of this remark is clear, because, with the exception of militant minority groups, fierce dedication to individualism will produce not revolution for society but cultural drift such that the dynamic spirit of a previous age is lost. Like the faded innocence of youth, and the less attractive and more romantic attitudes of satisfied middle age will characterize the man of the year 2000.

Other Problems for the Future: Some Speculations by the Institute for the Future

Whether the picture of alienated man, grimly presented by social critics, prevails on into the twenty-first century or whether some idealistic upheaval takes place is not the sole issue that futurists, particularly planners and educators, must deal with. Such a topic, while fascinating, is so philosophically global that it may miss the specific discernible trends of life that may identify the specific problems that must be dealt with in the year 2000 and beyond. Among these problems is the need for alternatives to the vacuum value system, if there is to be one, with a focus on the role of religion, family life styles, the work ethic and leisure, the economy, and, for what appears at the present to be the one constant (and it too is wavering), the system of politics.

There are those who are willing to cite definitive trends in each of these categories. The Institute for the Future[10] presents these views:

1. Religion-values

   There is a general feeling of powerlessness, leading to the alienation phenomenon, which requires some social invention to decentralize some aspects of decision-making. This reflects a basic theme in most writing about the future.

   There is a greater acceptance of multiculture, with a search for new forms of values and expressions, especially in the younger generation. No leveling off is seen.

2. Family-life styles

   Family structure: There is a greater acceptance of change and flexibility as normal.

   There is a much greater emphasis on psychological rewards of life; there are high expectations, and a greater demand for sexual expression and satisfaction.

   Abortion is becoming acceptable and limitations on it are rapidly disappearing.

3. Work ethic-leisure

   There is a manpower revolution, in the sense that high economic returns on the costs of labor are required, with manpower for marginal economic activities becoming unavailable. There is a concomitant rapid alteration of the educational level of those entering the labor market.

4. The economy:

The thesis that economic development will take care of poverty via a filtering down of benefits is being disproved.

Concentrated investment schemes associated with pension systems are gaining acceptance.

The income aspirations of the below-average economic class are growing ever faster and more demandingly; it is from this segment that the main thrust of future expansion will come. National policy has promised an end to poverty, and the poor are expecting the promise to be kept.

Research and development activities are on the increase.

There is an increased understanding of the role of innovation.

More attention is being paid to social goals, for which economic stability is but a means.

5. Politics:

Use of specialized personnel to control behavior (e.g., police) has been increasing markedly in the last hundred years.

Increasing power (firepower and technology) in the hands of the state is making "traditional rebellion" useless and is leading to guerrilla and underground tactics.

The use of wire-tapping is increasing.

The fact that big local units of government cannot handle their own revenue problems makes us rely more and more on a centralized government for revenue and along with this revenue comes more central control.

There is a growing interest in institutionalizing "social accounting," creating special agencies whose purpose is to evaluate the effect of programs and to measure progress being made in achieving national objectives.

The non-economic aspects of societal decision making are becoming more important than the economic ones.

Administrational, political, and bureaucratic inflexibilities are making any change in the pattern of the federal aid to state and local units of government increasingly difficult to accomplish.

Within the context of these trends, the Institute for the Future report offers these predictions made by a panel of experts responding to the Institute's questions.

1. Religious values

The majority of respondents foresaw continuing disorder and disequilibrium as well as an increase in the alienation and impersonality of urban life.

Most respondents agreed that [illegible] of [illegible] to [illegible] economic [illegible] would increase from slight in the '70s to moderate in the '80s and '90s.

... an increase in the drop-out rate of middle class youth perhaps in order to enter new service occupations to supplement or replace clergymen and social workers, was not considered as likely but was not entirely discounted.

There was considerable disagreement over the possibility of increased teaching of religion in public schools and colleges though it was considered possible that to some degree people would increasingly turn to some kind of ideological commitment to add emotional fervor to their work, especially in the last decade of the century. As to any falling away from the churches, an decrease in size and increase in [illegible] of parochial schools, no clear, single trend emerged. It was agreed that new religions or [illegible] religions may spring up to a limited extent through the rest of the century but there was disagreement as to the probability of specifically anti-rational, or mystical, movements. Opinion was even more divided regarding upsurges of anti-scientific ideologies or [illegible] [illegible] based economic or political activities. It may be possible that term, especially, different interpretations of the terms used account for the wide diversity of opinion.

The tendency toward a more individualist society gained strength in the '60s, reflecting different outlooks on the part of the respondents, some expecting an increase and others a decrease in this trend. Similarly, there was considerable disagreement as to whether we would see greater individualization of the mass media. The trend toward a social revolution leading to the writing of humanistic laws and the establishment of a humanistic social order was given a small but positive probability for the '80s or '90s, but again this was not unanimous.

5. Family life styles

The panel expects the family eventually will take on many aspects of a "leisure activity unit," but this was viewed by most respondents as a gradual and moderate trend reaching significant proportions only toward the end of the century. Similarly, the panel's expectations concerning the increasing importance of companionship as a main reason for the family's existence are for the most part quite mild, some panelists expecting little or no change from present circumstances. Differentiation of several forms of marriage contracts was not expected to become a particularly widespread phenomenon. Though all the respondents expected inexpensive and uncomplicated mass contraceptive devices to become widely available, and this was judged to be very important to the future of the family, this study did not produce any consensus as to the potential effect of the "pill" on the strength of the family as an institution.

Consensus among the panel was much more pronounced regarding the following developments: the availability of methods to predetermine the sex of children was considered increasingly likely, especially in the last decade of this century; and neutral methods for rearing children were expected to gain in acceptability; in a different sense, child care was to be increasingly accepted as a governmental responsibility, [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible], and concern for human [illegible] [illegible] expected to appear in the areas of education and social services; the advent of social security-like schemes begun in [illegible], which would assure the provision of services to children irrespective of the parents' economic position, though not considered imminent, was viewed as both highly possible and important in the long run.

6. Work ethic–leisure

The respondents differed as to whether technological change would substantially contribute to future alienation in society by significantly increasing unemployment. Some expected this trend simply to continue at present levels, others expected it to increase over time, while still others expected an eventual decrease. Similar disagreement appeared over the extent to which a full employment economy would remain a publicly avowed goal. On the other hand, most respondents indicated that they expected guaranteed-income plans would gradually be devised to cover many not in the work-force, and that, at least in the long run, a trend toward bi-occupationalism might slightly relieve alienating strains in our society. The respondents also expected the value structure would gradually tend toward greater recognition of merit in non-economic areas.

4. The economy:

The panel did not unanimously foresee a major shift of resources from military and space programs to urban programs over the next decade..... However, should such a shift eventually take place, they felt it could contribute to substantial structural changes in the economy towards the latter part of the century. A crisis in high-demand labor-intensive economic activities (such as health, housing and education) was expected to lead to major transformation of their organization and technology, moderately in the next decade, very noticeably thereafter. New careers for women were expected to develop quite steadily through the end of the century.

The panel thought that, as the trend toward entering the work force at a later age increases quite rapidly over the next 30 years, the problem of the placement of young men who do not fit into the standard pattern of higher education might at first become more severe. Yet this was seen by many respondents as a transitional problem, of greater significance in the '70s than in the '90s. There might also be some increase in the drop-out rate of middle-class youth, who might increasingly search for new service occupations in the area of social work, but this was not considered to be a major trend by most of the panel.

Most respondents agreed that the standard age of retirement would probably decrease to 60 or less, although some felt the opposite trend would appear after 1980. Most of the panel, however, did agree that the possibility of guaranteed income, greater vitality among the elderly, and the present trend in birthrates do suggest the coming of an "aged generation" especially after the turn of the century, with several careers, travel, and community service keeping life meaningful for the elderly and thus reducing alienation. Although inflation may cause some difficulties in the relationship of aged persons to their families, many respondents felt this would become less serious in the more distant future.

5. Politics:

Most respondents anticipated some increase in our acceptance of national control taking place in the '70s and '80s, either because of internal conflict, or because of the charismatic effect of the presidency, or because of major threats to security. Nevertheless, the probability that a massive law-and-order movement would tend to lead this country towards an authoritarian police/welfare state was considered to be only moderate in the next decade, and lower after that.

There was a high degree of agreement among the respondents that, as the political balance of power increasingly inclines toward the more densely populated areas within states, a considerable redistribution of functions may be expected between central and local government. Such concepts as "states' rights" may gradually give way to others which realign government responsibilities in terms of certain services. The small municipality within an urban area, while retaining control over aspects of education and police, may have many of its responsibilities taken over by state, regional, or metropolitan government.

While the Institute for the Future report presents one set of alternative futures for the year 2000, there are others who can offer specific insight into the various societal problem areas which will face man in the year 2000.

Other Views: Religion

In the realm of religion-values, the whole "value vacuum" has been more or less thoroughly discussed. The role of religion, particularly of organized religion, however, is a different matter. For the most part, the general feeling of writers is that institutionalized religion is a fading phenomenon and, as such, is not to be considered of much help for either generating or perpetuating any specific value system for tomorrow's world. Ivan Illich, in an essay on the priesthood and the Catholic Church,(31) notes that the Church is very much a corporate power and that it has lost much of its evangelical charismatic appeal. The Pope no longer holds even the mystique of a Byzantine king--he is more likely to be considered to be a chairman of the board of a vast clerical bureaucracy. In fact, Illich suggests that priests in the future should be "part-time" ministers and find their personal fulfillment in the secular world. While such a move might prolong the existence of the priestly function, it does presage the breakdown of a sacerdotal institution.

In a philosophical context, Warren Wagar observes:

> We once believed in a transcendental supreme being, addressed in its personal aspect as God. We believed that God created the universe as a cosmos, and not as a chaos: an orderly, meaningful, purposeful system of being, regulated in at least its observable modes by a divinely ordained body of natural law. Today, says William Barrett, through revolutions in science, theology, and economic life, "the central fact of modern history in the West" is the decline of religious faith. Religion had served for centuries as a "psychic container," as "a solid psychological matrix surrounding the individual's life from birth to death. . . . In losing religion, man lost the concrete connection with a transcendent realm of being; he was set free to deal with this world in all its brute objectivity. But he was bound to feel homeless in such a world, which no longer answered the needs of his spirit." And modern natural science, preoccupied with the problem of the mechanical and mathematical aspects of the cosmos, "stripped nature of its human forms and presented man with a universe that was neutral, alien, in its vastness and force, to his human purposes." Gerhard Szczesny, in his new book The Future of Unbelief, says bluntly what has needed saying for some time, that not even the recent flurry of renewed interest in Christianity awakened by modern man's sense of his inadequacy, has "altered the fact that the real content of the Christian doctrine of salvation, for a dominant type of modern man, has become completely unacceptable."(32)

Most pessimistic about the role of religion in the future, however, is

Hacker. He argues that morality--and presumably religion as the arbiter and protector of that morality--is a phenomenon of a settled community. "Morality is meaningful only when its tenets are taught within a settled community."(28) Individuals cannot be expected to invent codes of their own; nor can they continue to live by rules tailored for one milieu once they have transplanted themselves to new surroundings. If modern man is the mobile creature he appears to be (recall Toffler's observations on this matter), then it may be that modern man, as he moves to a totally unstable secular existence, leaves religion behind. And if religion is left behind, does that mean that man is amoral and that there is no viable institution capable of delineating an ethical system?

Other Views: The Family

Speculation about the role of the family and future life styles--from neo-Puritanism to hedonism--can be fascinating or frustrating. Popular attention has been directed toward the new wave of communalism supposedly attractive to large numbers of "alienated" youth. While communalism, with its attendant advantages of "in and out" individualism in which a person can closely identify and work with a group but not necessarily develop a committed relationship to any one individual, catches the popular imagination and makes for interesting articles in magazines such as *Look*, *Time*, and *Newsweek*, most writers believe that the family as it is now known is likely to remain intact to the year 2000.

Perhaps the most interesting idea about the family can be found in Toffler's *Future Shock*. Toffler agrees that communalism is more or less a fad and that the traditional family model will persist on into the future. However, like so many other observers, he points out that the family will be the nuclear type in which young families will be disaffiliated from their older parental families. Also, he suggests that family life will be characterized by serial monogamy rather than the traditional permanent monogamy still cherished in the marriage vows (sometimes in third and fourth marriages) which profess that the union will last "till death do us part." Toffler's notion of serial monogamy anticipates that society will increasingly tolerate, perhaps even openly sanction, an average of three marriages for men and women within a normal adulthood. The first marriage will be in youth and for reasons of experimentation--"trial marriage"--and passion; the second marriage will be for stability and reproduction of offspring; the third marriage will be for companionship and for compatibility with advanced stages of an individual's careers. Of course, there will be deviations--in either direction--from this pattern. However, should this pattern become the norm, it will increase the number of what Toffler calls "the fractured families." Familial stability will be destroyed and some future social institution must take this aspect of a changing cultural system into account.

Much larger than the immediate issue of the family is the role of women. As women become "liberated," as they begin to pursue full-time uninterrupted careers, the family relationship, as it is now understood, will suffer even more. While contraception and abortion--and perhaps ecologically inspired sterilization--could make the problem of unwanted children irrelevant, the value orientation of a society which has little regard for its future unborn and perhaps never to be born generations presents other problems.

Richard Flacks observes that

.... the deepest significance of the Women's Liberation movement

> is not the drive for equality of women within the existing social structure, but rather that it calls into question the fundamental sources of motivational support for the central values of capitalist culture. Further, to the extent that women experiment with occupational equality they offer very concrete ways of making a serious cultural revolution.(10)

This cultural revolution, no doubt, could hardly be more fundamental than on the level at which the woman eschews her traditional child-bearing and child-rearing function.

Margaret Mead(42) suggests that in the future parenthood may become an institutionalized profession; there will be those couples whose function it is to do nothing other than bear and to raise both their own and perhaps other people's children.

An alternative to a professional class of parents taking the responsibility for tending to the early needs of future generations is to be found in government sponsored child care centers. Perhaps the dream of a mother in Russia (where such centers now exist) which has been cited by Urie Bronfenbrenner will become a reality for American women as well.

> And you know what I am dreaming about? .... In the house families are living. Not far or not far away there is a building in which a boarding school complex is situated. Children from nursery to senior high school age spend their entire day there, but in the evening, when their parents come home from work, they meet with their children. On those evenings when the parents are busy with civic obligations or go to the theater, the children remain in their boarding school. They stay there, too, when Mother goes to a hospital or travels somewhere in connection with her job....(8)

Bronfenbrenner observes that a system such as envisioned by the Russian mother would not necessarily impose a personality hardship on the American child because this child, really, has little contact with his parents anyway. As

Bronfenbrenner notes, "In short, we are coming to live in a society that is segregated not only by race, but also by age." To substantiate this view, Bronfenbrenner points out that by the time a child is sixteen he has watched from 12-15,000 hours of television, which equals fifteen to twenty solid months, twenty-four hours a day. He also reports that when a sample of children were questioned as to whether they would rather spend their free time on a weekend with their parents or their peers, most opted for their peers. Bronfenbrenner's analysis of this trend, however, is not optimistic. "If adults do not once again become involved in the lives of children, there is trouble ahead for American society."

Bronfenbrenner's pessimism notwithstanding, the day care center may be the best way for adults to "become involved in the lives of children." A conclusion of a North Carolina Study, cited by the Pennsylvania Governor's Conference for Human Services Committee on Children and Youth reports, "an infant under three who spends his days in a properly oriented day care center while his mother works, can grow and prosper on a par with the child who stays at home with his mother.... The Russians have known this for years, and cater to the needs of the young child beyond anything we have ever undertaken." The task force, in addition, accepts this conclusion and recommends that there be "universally available pre-school day care services for all children and families who need them."

Leisure Time: Some Considerations

It is difficult to discern what will happen to man's orientation to work and the use of leisure time in the future. For the most part, contemporary society has come to think of the forty hour week as something sacred. There have been attempts to reduce the work week from five days to four (e.g., the Long Beach, California, Police Department shifted) but this reduction still demands forty hours of work per week (ten hours per day). It is almost as if there is a fear to transgress an old Puritan taboo in effect. Edgar Morphet[107] echoes this sentiment when he writes, "I believe it would be wrong to conclude that we should replace our philosophy of work by one of non-work (non-remunerative work, that is) but we should supplement education for the work that needs to be done with education for a gradual increase in the opportunities for non-remunerative but useful activities." In other words, unstructured leisure is not to be seen as an unmitigated blessing. Man must be prepared for it.

Joseph Garabino ("The Industrial Relations System" in Morphet, 1967[107]) sees no need to be overly concerned with the problem of increased available leisure time. What increases in leisure time does become available to an individual will be minimal. According to Garabino, there will probably not be a major acceleration of technological change and if the gross national product is at the 1965 rate, there would be $1,213 billion (in constant 1958 prices) and unemployment would be a minor problem. Garabino predicts that by 1980 the work years will drop from 1,999 hours per year in 1966 to 1,875 hours per year. Such a decrease would be minimal in that it would mean, for the average worker, a thirty-seven hour week with nine holidays and two weeks of vacation.

Other authors, however, dispute this view and believe that increased available leisure is inevitable. Eli Ginzberg[133] believes, like Morphet, in the necessity of work however, he also believes that an increase in leisure time is not only inevitable but also highly desirable. He points out that man has, in the immediate past, opted for consumerism as the chief motivation in life, but now that technology is capable of supplying the demands of consumerism, man's concern will turn to leisure. Ginzberg suggests that in the future, men's schedules will increasingly resemble women's schedules and that both sexes will have more time on their hands. Within the world of work, the service industries will predominate and the preparation time for professional services (like medicine, psychiatry, etc.) will be reduced. The big problem confronting futurists concerns the degree to which the masses will be able to adapt to having more free time at their disposal. Obviously, television and other passivity inducers will become boring. His own studies, with motion picture projectionists who work a twenty-eight hour week, at a modest income, convinced him that most men, with increased leisure time, will not "moonlight" on other jobs. Thus, will the new leisure class of workers be able to adjust on their own or must others plan activities for them?

Closely related to the problem of increased leisure time is the question of whether some people need to hold jobs at all. Robert Theobald[13] states, "It is therefore no longer desirable that the socialization process should concentrate on the goal of jobs for all since an increasingly large proportion of the population will be excluded from the need or even the possibility of holding a job."

The suggestion that not everyone need hold a job is not without its merits, especially if Ivar Berg's observations in The Great Training Robbery[4] are correct. Essentially, Berg argues that today the job market is mainly overstaffed with overqualified, over-educated individuals who are doing work which ultimately breeds in them a deep sense of dissatisfaction. The American myth has been that more education and/or training meant a better job. However, this is not necessarily the case. Berg points out that by 1970 there could be 2.2 million more college graduates than are required for the nation's appropriate jobs. The chance is those either these 2.2 million unfortunate highly trained individuals work at a task for which their training is superfluous or they don't work at all.

While it is tempting to speculate about an increase in leisure time, the only real leisure class, apart from the very wealthy, are the very poor. And it appears that an economic problem more immediate than that of leisure is that of welfare. Indeed, though some may shudder at the thought, a grow- g mass leisure class must first lead to the poor before it could become a welfare class. A number of writers — Robert Theobald, [illegible], [illegible], [illegible], John Kenneth Galbraith, [illegible] and President Nixon himself — stress the necessity of guaranteeing, at the very least, a minimum annual income. This view, however, runs counter to that of a large number of people who, as [illegible] has observed, are devoted to the ideology of individualism. This ideology is aptly described by Theobald who tries to remind them that "we have forgotten that during the Middle Ages, it was believed that the individual who failed was entitled to not only economic but also psychological support from the society. In other words, it was assumed that society was basically responsible for individual failures. Today, of course, we have come to believe the opposite."[49] Perhaps the words attributed to the medieval [illegible] as he viewed the building of the great cathedrals are appropriate today: "The [illegible] are more [illegible] than [illegible]. Your [illegible] you clothe in gold and your children you allow to go naked." But, then, such a view runs counter to

[illegible]

what may be left of our contemporary value systems, and welfare, let alone concern over increased leisure, illusions against the visions of that dreaded word "socialism."[illegible]

Politics in the Year 2000

The political visions of the year 2000 are as murky as are the visions of religion, life style, multi-culturalism, and economics. The all too easy temptation is to speculate that political America will drift along with the events now in evidence and that, most likely, a highly bureaucratized, probably more federally-centralized, government reflecting essentially the same system as that found in the 1970's will persist for at least another thirty years. This certainly seems to be the consensus of men such as Richard Scammon and Ben Wattenberg, Daniel Moynihan, David Riesman, and certainly Andrew Hacker. There may be sniping at the system, but for the most part this will be done by dissident minorities, such as guerrilla-minded blacks who, as Hacker points out, will be quickly repressed by the "establishment."[illegible] Such a movement in government would appeal, no doubt, to Scammon and Wattenberg's "blue collar" America who may, in fact, be "the real majority."[illegible]

There are, of course, writers who take exception to this stance and foresee [illegible] of political developments in the next thirty years. Lawrence K. Frank[illegible] argues that our political institutions must be revised if America is to survive. Richard Flacks suggests that concern over politics and political movements is but a small portion of the activity to be engaged in if there is to be a transformation of society. He cites the German student leader Rudi Dutschke—"[illegible]" as an attitude by the dissenters—who resemble the reformers that they have begun the "long search through all the institutions of society.[illegible] [illegible] suggests that [illegible] remark "implies that fundamental social change in advanced industrial society is not initiated or mediated through the political system, nor is it likely to result from mere interventions and rebellions. Instead, fundamental political change occurs only after a prolonged period of ferment and conflict within the principal cultural, social, and economic institutions of the society."[illegible]

One commentator who concurs with [illegible] observation that there might be some change in political structures within the next thirty years is [illegible] [illegible]. He writes in [illegible]:

> . . . political and social life in [illegible], I think, is [illegible] much more collectivist or much more anarchic or [illegible] [illegible]. Governments, national and [illegible], and even supra-national will become more closely tied together as they [illegible] the political, social, and psychological [illegible] [illegible] and more [illegible] to their [illegible] [illegible] as they [illegible]. The [illegible] we accept will [illegible] [illegible] obligations and more [illegible] acceptance. The [illegible] we [illegible] will [illegible] [illegible] [illegible] from those who accept them and will [illegible] us to [illegible] and more [illegible] struggles.[illegible]

It is difficult to obtain any clear indication of whether or not American political life in thirty years will be characterized by a "blue collar" [illegible] "mass majority" or by a violent upheaval of the existing social order by dissident minorities. It may in fact be characterized by both extremes. American society may be a society but not always politically [illegible] [illegible] [illegible] groups, one group quite satisfied [illegible] perhaps even smugly [illegible] the other group [illegible] [illegible] so that it might seize the opportunity to displace the [illegible] [illegible] the doubt the popular slogan, "America, love it or leave it," will have relevance the [illegible] years to come. The major problem, however, will be in determining

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who loves America and who will be encouraged to leave it.

The inherent complexity of discussing this issue is evident not because of the widespread treatment given it in literature concerning the future but, rather, from the virtually universal avoidance of the problem by authors who otherwise openly speculate about societal difficulties to be faced in the year 2000. And, within this larger issue of political polarity, nothing is more volatile and more ignored than the question of race-relations. While many words, perhaps too many, have been spoken and written about the race problem as it exists today, very few authors have ventured to speculate in any serious way about future relationships between blacks and whites. Nevertheless, the black-white division in America is not going to disappear and it probably will not be resolved by peaceful integration. Contemporary reality suggests that any future idealistic solutions to racial difficulties in the United States are well beyond the scope of planning for the year 2000.

Kahn and Wiener, along with most speculators, concur that the black population will continue to increase in the major cities over the next thirty years. [See following table cited in item (33).] In effect, as most people already suspect, the central urban areas of the various metropolises of the country will be inhabited by blacks and the rapidly expanding suburbs will continue to be dominated by whites. De facto segregation of the races, as represented by residential patterns, will no doubt not only continue to exist as it does today but it will probably increase to such an extent that it is a characteristic of virtually every metropolitan area in the country.

While this metropolitan trend of de facto segregation will most likely

TABLE XII

How Negro Population Will Grow in the Cities

Negroes will make up half or more of the population inside these cities by the year 2000:

	PER CENT NEGRO in 1960	PER CENT NEGRO in 2000
Washington, D.C.	53.9	75
Cleveland, Ohio	28.6	67
Newark, N.J.	34.1	63
Baltimore, Md.	34.7	58
Chicago, Ill.	22.9	55
New York City	14.0	50
Philadelphia, Pa.	26.4	50
Detroit, Mich.	28.9	50
St. Louis, Mo.	28.6	50

Negroes will make up one-third to one-half of the population inside these cities:

	PER CENT NEGRO in 1960	PER CENT NEGRO in 2000
Atlanta, Ga.	38.3	44
Kansas City, Mo.	17.5	43
Cincinnati, Ohio	21.6	40
San Francisco-Oakland, Calif.	14.3	40
Houston, Tex.	22.9	34
Buffalo, N.Y.	13.3	34
Pittsburgh, Pa.	16.7	34
Paterson-Clifton-Passaic, N.J.	9.3	34

Negroes will make up one-fifth to one-third of the population inside these cities:

	PER CENT NEGRO in 1960	PER CENT NEGRO in 2000
Boston, Mass.	9.1	31
Dallas, Tex.	19.0	30
Milwaukee, Wis.	8.4	29
Los Angeles, Calif.	13.5	20

How Negro Population Will Grow in the Suburbs

In suburbs surrounding big cities, Negro population will grow in years ahead—but still will remain less than one-fourth of the total. Here, for some major cities, are the percentages of Negroes in the suburban population:

	PER CENT NEGRO in 1960	PER CENT NEGRO in 2000
San Francisco-Oakland, Calif.	4.8	23
Washington, D.C.	6.1	19
Baltimore, Md.	6	19
Philadelphia, Pa.	6.1	18
Detroit, Mich.	3.7	13
Houston, Tex.	10.3	12
Cincinnati, Ohio	3.4	12
Cleveland, Ohio	.7	12
Newark, N.J.	6.7	10
Chicago, Ill.	2.9	10
San Diego, Calif.	1.1	10
St. Louis, Mo.	6.1	7
Paterson-Clifton-Passaic, N.J.	1.9	7
Kansas City, Mo.	5.9	6
Atlanta, Ga.	8.5	6
Dallas, Tex.	6.5	5
Pittsburgh, Pa.	3.6	4
Los Angeles, Calif.	3.1	4
Boston, Mass.	.8	2

How Negro Population Will Grow in Total Metropolitan Areas

Including both suburbs and central cities, Negroes by 2000 will make up one-fifth or more of the population in these metropolitan areas:

	PER CENT NEGRO in 1960	PER CENT NEGRO in 2000
Baltimore, Md.	21.9	30
Washington, D.C.	24.3	27
Philadelphia, Pa.	15.5	27
New York City	11.5	27
Cleveland, Ohio	14.3	26
Chicago, Ill.	14.3	25
San Francisco-Oakland, Calif.	8.6	24
Detroit, Mich.	14.9	20
Atlanta, Ga.	22.8	20
Houston, Tex.	19.8	20

Negroes will make up one-tenth to one-fifth of the population in these metropolitan areas:

	PER CENT NEGRO in 1960	PER CENT NEGRO in 2000
Cincinnati, Ohio	12.0	19
Newark, N.J.	13.3	18
St. Louis, Mo.	14.3	17
Kansas City, Mo.	11.0	16
Dallas, Tex.	14.3	13
San Diego, Calif.	3.8	13
Buffalo, N.Y.	6.3	11
Paterson-Clifton-Passaic, N.J.	3.6	10

SOURCE: Census Bureau, 1960; estimates by USN&WR Economic Unit for year 2000, copyright 1968, *U.S. News & World Report*, Inc., from issue of February 21, 1968.

rapidly continue through the year 2000, it is also quite likely that blacks will not happily accept it and whites will not be eager to reverse it. Most writers [e.g., Hacker(28), the institute for the Future report (10)] do not see the Watts type rebellion as a continuing phenomenon for the next thirty years. Rather, most anticipate that the status quo will be perpetuated by the government. There might be periodic outbreaks of violence, but these will be isolated in nature and will be bombings and other works of guerrila tacticians. While most blacks will tacitly approve these actions, whites, depending on their proximity to the incident, will condemn them. And the government, playing on some variation of a law and order theme--but short of offensive open aggressive authoritarianism--will effectively suppress such incidents with various managerial control actions.

Indeed, perhaps Hacker most sharply focuses on the race problem. While noting that there is little difference between white liberals and white conservatives on the race issue--liberals want blacks to remain in the ghetto, but to be happy; conservatives want them to remain in the ghetto but don't care if they are happy--Hacker states, "White America's responses can easily be predicted. Unwilling to undergo either the emotional adjustments or material sacrifices necessary to correct racial inequities, whites will adhere to less costly alternatives: retreat, resistance, repression."(28)

While the implications for the race problem are many, in the larger context the race problem is part of the general alienation which affects most people in this country. However, this alienation is collective rather than individual. Opposing groups polarized by skin color will continue to seek identity within their own group by virtual systematic exclusion of the other color group. Or stated more simply, the country will continue to suffer from racism, both black and white. This conclusion is reflected not only in casual observation of reality but has been duly noted in hosts of reports by private individuals and by foundations and government commissions.

Obviously, there is no easy answer to the racial question in this country. However, it is apparent that national leaders, social planners, and especially educators must work to eliminate this form of alienation from life in the future. Today's adults must be constantly informed by their leaders of the evils of racism and tomorrow's adults--today's children--must be constantly educated to avoid this weakness of their elders. While proponents of the blue-collar real majority status quo, through the government, may succeed, as most predictors indicate, in managing the problem, they most likely will not succeed in solving it regardless of what techniques or strategies (bussing, balancing, etc.) they might employ.

Overall, despite the urgency of confronting political developments--especially race-related developments--for the future, it is safe to conclude, albeit pessimistically, that American political life in the year 2000 will fairly well resemble political life in the 1970's--with a general tendency for increasing growth of bureaucracy and centralization of important decision-making power in the federal government. The student demands and counter-demands of minorities will not necessarily diminish in intensity--and in some cases, violent disruption, on a sporadic basis, will continue to be in evidence--but, save for a drift or trend toward greater collectivism or anarchy, stability and "blue-collar" economic, probably individualistic-oriented, politics will prevail.

Coping with the Social Forces of the Year 2000

The overriding question for futurists--government planners and educators in particular--is to decide what course of action, if any, is to be taken to meet whatever contingencies which might arise if the trends discussed above are allowed to run their course. It appears that several options are available.

1. Speculation about the future of life in the year 2000 should be ignored. This statement can be based on the assumption that any attempts to change society or to challenge the basic societal trends now in evidence will be futile anyway. Besides, one could rely on the faith that society will, as it has in the past, manage to muddle through the year 2000 meeting each crisis as it comes along.

2. Futurists could attempt to alert the mass of men to the dangers inherent in the societal trends evident in contemporary society and these same futurists could strive to develop new goals which would serve as the basis of a new value system to counteract the "alienated," isolated-individualistic value system which seems to be the root of today's social disorders.

One suggestion, in this latter optimistic vein, has come from Arthur and Stephanie Pearl(51) who believe that man must become involved in evolving a value system directed toward what is described in the Institute for the Future report as the "macro-problem," or the total problem of life on this planet, as opposed to the "mini problem" approach, which tends to deal with problems only as they become irritating to society at a given time. In other words, it may be possible to construct an intellectual model which--for more altruistic reason than survival--re-establishes total harmony in all dimensions of life: race, war, poverty, pollution, individual-social interrelationships, to name but a few.

Of course, even if the model could be developed, the task of converting the mass of society to a new set of values is enormous, if not impossible. To re-unite 200 million individual American wills--let alone the rest of the world--around a revivifying common core of ideals presents a monumental task for leaders in all walks of life. If, as trends indicate, society has fragmented to the point where virtually all social institutions have no more credibility, where, in a term used by Roszak, most young Americans in the counter-culture have made "the great refusal" and most Americans generally, in Hacker's words, "are incapable of being led, " what remains of the leadership function in social institutions--the family, the church, the state--is but a series of empty rituals reminiscent of T. S. Eliot's observations in "The Hollow Men" in which men with dead lips pray to lifeless stones.

Of course men can try, and many will, to escape this pessimistic cul-de-sac. But are there enough of these men? Wagar, none too optimistic, observes:

> A few thousand well-meaning people around the planet are conscious of the need to direct the attention of mankind to the construction of a new world order, but the climate of opinion remains unpropitious for any rapid progress toward that objective.
>
> The prospect, then, is for failure. Long before the century ends, the world civilization of technology and geography may commit suicide, and the world civilization of mind and spirit which struggles to be born, may die in the womb.
>
> And Karl Jaspers, though hopeful, admits that any survival is intellectually "impossible. " In brief, we are guilty and doomed to die unless we can escape to the sanity of a new civilization built to the world scale of human intercourse.(66)

It is dismal, indeed, to conclude a look at life in the year 2000 on such a despairing note. However, "doom saying" may be the function of prophecy. If a messianic or Golden Age is to be desired, the lamentations of modern Jeremiahs, or abused Teiresiases, are not without worth. It can be recalled that the Athenians, at the zenith of their civilization, reflected how tragedy--as in the Sophoclean trilogy with its individual and national catastrophies--presaged the ultimate illumination of individual souls and the restoration of universal harmony. For these Athenians harmony was a narrowly defined logos. Today, perhaps, a new value system which transcends the petty concerns of individual men and yet respects their individual souls can be generated. It can be called ecological or whatever one will. The challenge to planners for the future and to leaders for the future is clear.

SECTION II: SCIENCE, TECHNOLOGY AND THE ENVIRONMENT IN THE YEAR 2000

Predicting the Future: Science, Technology

The world of the future appears less difficult--or at least more tempting--to speculate about in the scientific, technological, and ecological realms than it is in the more global, philosophic, and societal context. This apparent (and perhaps deceptive) lack of difficulty and increase of temptation--though the risks inherent in predicting the future here should not be minimized--may be due to the apparent belief that scientific, technological change, and general ecological-environmental decline is inevitable (cf. de Brigard and Olaf Helmer cited in Section I).

There can be little doubt that science and technology have played a major, if not the major, role in shaping not only man's present but also his future. While many critics have flailed away at science and technology as having created a neo-Orwellian world, others have praised the developments and developers in these fields as being the harbingers of a new age in which man will ultimately realize the fullness of his capabilities and enter a new Golden Age. Wherever, between these two extremes, science and technology have taken and will take man, the importance of these realms cannot be ignored by anyone with a serious interest in helping man to cope with the world about him.

For government planners and educators, the need to consider the future directions of science and technology is readily apparent. While not every potential direction that science or technology might take can be discussed or, for that matter, even considered--such a task would be impossible--there are key areas which must be treated. These areas--so important to the future of education, particularly for leaders of society in the future--are biomedics, the cybernetic (computer) revolution, developments in communication, and advances in modes of transportation.

Biomedics

Biomedics encompasses a wide field including such traditionally different disciplines as physiology and engineering. The efforts of scholars in these fields have resulted in opening up new dimensions for future societies, dimensions which may involve the development of entirely new types of men who will populate these societies.

One field of great concern for futurists within biomedics is that of genetics. Research in genetics is a major effort in many university laboratories. The consequences of this research, however, are what should concern planners and educators for the year 2000. The possibilities of genetic manipulation are already apparent. Tatum(60) observes, "In a more specific way, 'genetic engineering' by directed mutation can be seen as a possibility. In micro-organisms we already are learning techniques of producing mutations in a nonrandom fashion."

This "genetic engineering" hopefully will have positive benefits for society at large. Among the more optimistic speculative scientists is Delgado.(11) He states, "The genetic code is being unraveled, introducing the possibility that some time in the future, we may be able to influence heredity in order to avoid illnesses like mongolism or in order to promote transmission of specific anatomical and functional characteristics."

Echoing this sentiment and offering hope in the area of preventing mental deficiency is Halacy.(29) "At the very least, fewer people should be mentally defective in years to come. Already it is known that anoxia and certain other chemical deficiencies cause some of the unfortunate mental defects."

On a more global level, however, work in the field of genetics suggests that the possible consequences of genetic change are more than the desirable individual engineering achievements such as the prevention of mental deficiency in unborn children. For example, there is the possibility that developments in genetics will have implications for large groups of men as well. Glass suggests one of these implications when he writes,

> Man would be foolish, however, to suppose that he can avoid every change of circumstance that will have evolutionary consequences. Even now certain prevailing conditions are greatly changing the nature and magnitude of selection pressures. One of these is the decrease in the geographic isolation that formerly operated to establish and conserve the various human races and ethnic subgroups. A second is the steadily increasing size of population. Both of these factors tend to homogenize the world's populations, although to say so by no means signifies that individual genetic differences will disappear. These will be conserved within the amalgamated populations, even though the differences between the groups will largely vanish.(21)

On the other hand, genetic control may not be a rapid development, save in the event of some crises. In other words, what is likely to happen--and it is freely admitted that predicting the future in this area is usually directed toward discussing more shocking mutations--is that genetic control on any extensive perverse level is unlikely. Davis, noting the general resistance of society to any wholesale genetic manipulation, comments:

> The major obstacle to a program of human hereditary improvement is therefore not any lack of genetic science but the resistance inherent in the stability system of existing societies. ... Under the circumstances, we shall probably struggle along with small measures

> at a time, with the remote possibility that these may eventually evolve into a genetic control system.... It seems more likely, however, that the change will be precipitated more suddenly by something new in human history, a genetic crisis. The survivors of a nuclear holocaust might prove willing to adopt a thorough system of genetic control in order to minimize the horrifying effect of radiation on the next generations..... Eventually, regardless of how it comes about, human genetic control seems bound to occur, unless all progress is halted.(9)

Nevertheless, even though it is fairly well accepted by most writers that dramatic genetic engineering is unlikely by the year 2000, a central question does remain. Posed by Mayr, the question is, "... a genetic change is inevitable over the centuries, and man must ask himself whether he wants to adopt a *laissez faire* attitude toward these changes or to be the master of his own fate."(39)

One aspect of biomedics which has occupied much popular attention recently is that of "cloning." Cloning is a feat of genetic engineering so dramatic that it deserves special treatment apart from the general area of genetics. The relative popularity of speculation about this field is attested to by Panagakos(49) who wrote a series of articles on this development for the *Los Angeles Times*: "While genetic surgery to treat individuals with genetic diseases appears to be far in the future, other genetic technologies may soon be upon us. One such technique is nuclear transplantation, or cloning." In the process of cloning, it will be possible to reproduce an entire being from a single cell. To date scientists have been able to clone a frog and a goat from a cell of its identical parent. If this technique of eugenics--for cloning really appears to be in this category--is perfected, it will no doubt be of great benefit to those involved in animal husbandry. Gordon and Ament(24) suggest that when it is possible, "the technique will be used routinely for the breeding of other animals, especially in cattle farming."

The truly dramatic event, however, will be the scientific reproduction of the first cloned human being. Dr. Joshua Lederberg certainly understates the issue when he comments, "There is nothing to suggest any difficulty about accomplishing (cloning) in mammals and man, though it will be rightly admired as a tour de force when it is first implemented."(49)

Of course, the ability to clone human beings will present as yet unrevealed problems. While it might be possible to clone an intellectual class of exact duplicates, say of a von Braun, or an army, say of Lt. Calleys, who will serve in automaton fashion, is such a possibility desirable? Certainly cloning, in the hands of a less than altruistic leader may prove that Hitler was but ahead of his time. This possibility, maybe more than any other within the field of biomedics, poses the most serious dilemma to futurists. Will the possibility of such a feat insure inevitability? And if it does occur, can the existing society, with its many functions and roles cope with an entirely new class of people whose ancestors, more indelibly than any ancestors in history, have left their lives, through their cells, open to virtually indefinite reproduction and possibly exact replication?

Closely allied to the field of genetics are the developments associated with extra-ova fertilization. These developments will allow human embryos to be developed in test tubes--"in vitro"--and then either implanted in surrogate mothers or allowed to reach maturity outside the mother so that medical men can keep them under observation in order to detect, early in the gestation period, any possible medical defects. Watson(67) predicts that "_in vitro_ manipulation of human eggs is likely to become general medical practice, capable of routine performance in many major countries, within some ten to twenty years." Gordon and Ament also concur with this view, although they believe that the techniques will not have been developed until the year 2000. Panagakos, however, observes that in the near future there will be increasing pressure from medical researchers to try experiments in this field. For the most part, the ethical and psychological aspects of this phenomenon have not been discussed; this, like the broader field of genetics, could be an area in which more than purely scientific questions need to be asked.

At the opposite end of the life spectrum, medical biology by the year 2000 should also have made some important advances in preserving and protecting the general health of the populace with the result that more individuals will reach old age. Panagakos states, "Dr. Alex Comfort, director of the Medical Research Council of London's University College, reflecting the attitude of many experimenters, believes that the enormous power of American science might uncover the secrets of aging."(50) Also reflecting this trend toward greater health protection is Bronowski.

> Thus, our whole approach in biology for a long time to come will center on active health. The new outlook is that we should not be content to cure only what goes wrong when the body is invaded by some outside agency. Instead, we should ask how we can direct the ordinary body processes so that they do not go wrong, and so that little oddities which start here and there are redirected before they go wrong.(5)

While improvement of general health for the population is certainly a salutary goal, it does suggest an interesting societal problem. Not only would there be an increasingly enlarged group of older people in society, but there also would be an increasingly enlarged gap between the culture of the young and the old, particularly if the young were of the cloned, or eugenically perfected class and the old were the more traditionally oriented people of the 1970's. Of course, that problem could be solved if the cloners clone only those individuals who will be subservient to the traditional values of the healthy aged.

The role of drugs and surgery in manipulating and controlling behavior is also a facet of biomedics which should not be neglected in any concern for the future. Quarton(54) sums up this development when he observes:

> A cautious extrapolation from present acceptance of behavior-manipulation techniques suggests that a limited extension of use of surgical techniques and stimulus-control methods will proceed under fairly close supervision by the public and by academic institutions. Many new drugs will undoubtedly be developed both in academic institutions and by large private drug houses. Advertising will probably continue to exaggerate the need for drugs in order to promote sales. If we argue by analogy from current difficulties in control of drugs, we can assume that new drugs will be accepted... and will pose serious problems for society and for those institutions of government that are attempting control. Because drugs can be used easily, it is also quite likely that they will constitute the most common technique for manipulating behavior with full social approval--for instance, increasingly in the handling of behavior deviants.

Gordon likewise suggests that some sort of behavioral control will be in evidence in the future.

> New methods of behavior control which stem from biological research will have included (1) the development and use of LSD-like drugs to heighten perception and learning speed of retardates, (2) knowledge of how to stimulate cognitive growth to a maximum ability in preschool children, (3) brain surgery of psychochemicals for modifying the behavior of criminals and (4) radio stimulation of the brain of some people in society.(25)

Closely allied with behavior control is learning control. The possibilities inherent in such developments may be appealing or appalling, depending on one's point of view.

> ... many scientists have begun to talk with genuine awe of the

> prospect that brain research may hold for the future. Some speak of 'memory molecules' and the possibility of learning anything from basic French to integral calculus by taking the appropriate pill... Others discuss quite seriously the possibility that the work of the brain probers, combined with a number of recent strides in molecular biology, may eventually permit the genetic engineering of men with superbrains.(53)

Of course, once again the question of values comes into play. For example, what are the ethical responsibilities of those who do the controlling? Also, who is to decide who is a "deviant" or who is to learn what? Such a problem may place an insupportable burden upon the government, the courts, and even, perhaps, the schools, especially if the latter are conceived of as being mass socializing agents.

Cybernetics

The second major area in considering the scientific-technological realm of the future concerns the computer. While most technological forecasters focus on the important place the computer will occupy by the year 2000, there is some dissension in their ranks. This dissension, however, is centered upon when the computer revolution will be complete rather than on the extent of its existence.

The most tempting speculations about the future function of the computer center on its adaptability to performing those tasks most affluent and moderately affluent people would rather avoid. Pierce(52) predicts "... Computers will take care of a great deal of office drudgery. And by means of electrical communication, offices will be linked to other offices, to files, to reproduction facilities, and to other resources," while Gordon suggests,

> Several other breakthroughs in physical technologies will have occurred between 1985 and 2000. Complex programmable and self-adaptive robots capable of performing many chores will

> have found uses in the household of advanced countries...
> Computers will have been built which comprehend standard IQ tests and score above 150.(25)

And finally, there is the opinion that virtually limitless capacities can be expected of the computer in the future. Representative of this opinion is Feigenbaum(15) who rather expansively assesses the computer revolution with this conclusion: "Is there any reason to suppose that computers will never reach the full capability of human intelligence? None whatever. Not a single piece of evidence, no logical argument, no proof of theorem has ever been advanced which demonstrates an insurmountable hurdle along the continuum."

On the other hand, as some suggest, it may be entirely too early to prophesy about any spectacular breakthroughs in adapting the computer to daily living within the next thirty years. Within the field of education, for example, while futurists like George Leonard(35) envision a large role for the computer, Silberman writes:

> No computer manufacturer, for example, has begun to solve the problem inherent in building a computer that can respond to spoken orders.... There are grave problems of reliability as well; a wad of chewing gum can throw almost any part of the terminal out of whack.
>
> Even with these constraints and limitations, moreover, no computer manufacturer is even close to being able to produce equipment at a cost competitive with conventional instruction.(58)

And Silberman's sentiment is echoed by Oettinger:

> In short, much lead time is still between us and the reduction of experiment to practice. We shall see that time and again in the brief history of computing, glowing experimental results have lost their meaning in the translation from pilot study to useful operating size.(48)

Of course, many people would argue that the present rate of adaptation of the computer to needs of the business world is spectacular enough and that future widespread uses of the computer will be less than dramatic because such uses will be more or less commonplace. However, considering the division of opinion, speculative alternatives within this field are moot.

Communication

Another field within the scientific-technological realm which already has had and will continue to have a significant impact on man in the year 2000 is that of communication. The development of the computer has already left its influence in this area. For example, computer vote profile analyses, quickly communicated to a mass audience even before the polls are closed on election night, have already contributed to a decline in participatory democracy in the United States. Mesthene, on the other hand, points out,

> Sophisticated computer technology now makes possible rapid and efficient collection and analysis of voter opinion, however, and could eventually provide for "instant voting" by the whole electorate on any issue presented to it via television a few hours before, for example, by the President of the U. S. . . . In other words such potential technologies as computerized instant voting--and such actual ones as television news, for that matter--have the effect of raising political tensions and of challenging our society to clarify the meaning that it attaches to democracy.(43)

Perhaps most relevant to democracy, however, is not the "instant computerized news," although the ramifications of managed mass saturation news--computerized or not--are significant; the greater threat to democracy might be the invasion of privacy sophisticated communications might make possible. Quarton warns,

> Modern communication equipment and rapid computational devices increase the number and range of surveillance devices and the methods of getting information in a useful form to a person or

> machine engaged in behavior control. Radio transmitters can be implanted in human subjects. Behavior can be observed by television cameras and listened to by microphones. Routine behavior can be recorded at check points in computer procedures, commercial activities, and at toll gates. (54)

Kalven(34) concurs with this observation and states, "Moreover, since the culture will become cognizant of this advance, men will live with the constant possibility that they are under surveillance without ever being able to be sure whether this is so."

These warnings notwithstanding, the possibilities available to an Orwellian "big brother" are not likely to impede any large-scale developments in the technology of communications. Pierce, for example, predicts, "... it will be possible to put at a low cost very complicated yet highly reliable electronic equipment almost anywhere--a telephone set, a car, or even a pocket."(52) Gordon observes, perhaps to the delight of elders and the dismay of youth, that "On-the-spot communication will be increasingly available to the citizens of most advanced countries; individual portable two-way communication devices will be in use, much to the consternation of teenagers required to 'call in' on dates and to regulatory authorities required to allocate and control frequencies."(25)

More far-reaching, positive effects are likely to be found in expanding the universe of communications. Rather than judging future communication developments strictly from the negative perspective of invasion of privacy, it is possible to broaden the intellectual spectrum of people in virtually every community, regardless of size. Television, once an efficient cable system is in operation, can do much to unify a people. Pierce stresses this aspect when he states, "But CATV has another potentiality as well. Through importation of signals from a distance, it can provide a community, large or small, with as many channels as are available to the residents of Los Angeles or New York. Here, indeed, is the ultimate in the abolition of the 'sticks' and 'boondocks'. "(52)

Perhaps most optimistic about the future uses of a developed communications system, however, is McLuhan.

> Electronic media, for example, create learning for everybody instead of assigning it to specialists. They create an environment of Knowledge.... Where learning before had been locked up in little citational cells and classified slots, under electric conditions all that had been previously cherished, precious, erudite becomes general, mass-oriented, diffuse--environments. What had previously been the context of a select environment becomes an environment of toil. That is the future work of mankind--just processing the data of the electronic environment. (40)

Most likely, it is safe to say that progress in the field of communications in most technological fields is likely to be inevitable. A major question facing planners of the future, though, remains. Are communications to be used at the extremes to invade personal privacy or to expand mass consciousness? The possibilities in either direction are, perhaps, little short of phenomenal.

Transportation

Closely allied to the field of communications is that of transportation. Again, the theme of inevitable technological progress is apparent. There are few who would deny that individuals in a mass society with a highly sophisticated electronic communications system at their disposal will be satisfied--in the nomadic world of 2000, as Toffler describes it--with clogged freeways, overcrowded airports, and "stacked" flight patterns.

Among the more optimistic predictions for the year 2000 is that of Ewald:

New speeds approaching the physical limiting speed of 670 million

> mph appear to be within reach.
>
> By the beginning of the twenty-first century, at least one new high speed, long distance transportation mode should have been developed and added to the nation's stockpile of new transportation modes. High speed systems should be speeding air travelers from all U. S. airports to interfaces with local distribution systems. At least one east-west and two north-south automatic highways should be guiding and controlling individual passenger vehicles speeding from coast to coast and border to border... The transportation network capable of transporting both people and things, apart from each other, from any point in the U. S. to any other point.(13)

Other examples of predicted breakthroughs in the areas--biomedics, cybernetics, communications, and transportation--could be given. To do so would involve minute sifting of data generally beyond the capability of anyone outside of a particular field or entering the realm of science-fiction fantasizing. Either task may not be all that productive. For the most part, scientists and technologists, by the nature of their work, eschew the long view in favor of working toward the shorter, more practical, next achievable step. And science fiction writers, with the exception of a few philosophically prophetic individuals, generally offer futuristic utopias which usually are replete with fulfilled dreams or frustrating nightmares. In either case, whether it be in the world of the professional man of science and technology or in the world of the artist-speculator, one assumption remains basic. The data available in the present suggest that man in the future will have a life marked by "inevitable progress," whatever direction it might take. Thus, is man to master his as yet unclear material world of tomorrow or is he to be mastered by it?

Predicting the Future: The Environment

Within the realm of the scientific-technological there will be developments which will affect, perhaps in a more visible manner than biomedics, cybernetics, communications and transportation--though not necessarily in a less significant manner--the quality of life in the year 2000 and beyond. Among these more visible developments, advances in architecture, the management of the natural environment, and trends in population growth or decline could possibly have implications for futurist planners and educators well beyond the immediate appeal that popular speculators can give them because of their tangible nature.

Again, of course, the risks in suggesting that one set of prophecies or another is likely to come true by the year 2000 is obvious. The danger of speculation in this realm perhaps is greater even than in discussion of the societal trends for the future and the more clearly scientific possibilities (biomedics, cybernetics, communication, and transportation) because prophecies here relate so directly to the material-consumer interests of the layman. Hopes for a tangible comfort-directed utopia might obscure a "hard" look at what is possible and might prevent a precise assessment of the possible implications of such a series of developments. In other words, if a look at societal trends is really the province of the philosophical, and the purely scientific-technological realm is the domain of the researcher-expert, then this latter realm--so closely related to the layman--is most susceptible to becoming the target of popular opinion and wistful thinking. However, this latter area is not without reasoned opinions which must figure in any attempts to generate a picture comprehensive enough to discuss the world and type of life leaders in the year 2000 will face.

Architecture

Just as there is a trend toward "inevitable progress" in other technical-material fields, there should be noticeable, perhaps dramatic changes within the field of architecture. It is generally believed that there will be a development of new, ultra-strong materials for construction. These developments, plus more sophisticated architectural engineering, could have a major impact on building in the future. Gordon observes,

> New materials of construction will have a major impact on the society of the scientific breakthrough. . . . if these ultra strong materials can be developed, the effect on architecture will be tremendous. Buildings will be lighter, more open. Unsupported spans will curve gracefully from solid anchors. Cantilevers will be commonplace.(25)

Bell(1) notes that wood may be the one resource which could be in short supply. This shortage probably will result in a greater use of plastics and thin metals with high insulation properties for construction. As a result of using these materials, Bell predicts a lower cost than at present will be a feature of future private and public buildings.

Developments in architecture, however, are expected to go beyond projected lower costs and new materials. Increasingly, as Progressive Architecture(61) report suggests, architecture will be thought of as a part of the environment that causes things to happen. There will be, many architects believe, a reaction and counteraction between a building and its environment. According to the Progressive Architecture report,

> Architects have begun to concern themselves with the particular place and time of their buildings; with their contexts, the psychological effects of their functions and spaces. Like other artists, and perhaps like some scientists, they are beginning to find inspiration not in preconceived ideal concepts such as "office," "house," "school," and so forth, but are sparked into creativity by the particulars of each situation, including the time and place of creation and use, the permanence or impermanence

> of the building--all or in part--the fragmentation of forms and spaces, and the entire reaction and counterreaction of the building and the environment.
>
> The view of some that the building might be part of a changing process is illustrated by the fact that a few architects have begun thinking of differentiation between parts of a structure which are liable to change and those that might be relatively permanent. In such a situation, a building will not only have a kinetic relationship with its surroundings, but with itself also. It cannot merely be an object to look at, but a part of the environment that causes things, reactions, to happen.(61)

Although architecture of the future "will seek an immediacy with both its users and the environment" around it, in the field of style the trend will be toward the functional. E. Finley Carter, in Calder,(6) predicts that "the trend will be toward the simple, away from the ornate, toward the functional, rather than the classic." Architectural tools, too, will change. If there is to be any large scale use of new materials, functional design, and interrelationship with the environment, most likely the computer will play a dominant role. The AAUW report optimistically states, "When the architect and planner learn to use its (the computer's) potentialities creatively, a great realm of design possibilities will inevitably open."

There is little doubt that the basic innovations in architecture mentioned above will greatly influence homes and domestic life in the year 2000. However, it would be foolish to suggest that virtually everyone will be living in a house of the future by the year 2000. Carter observes, since the average "life" of homes built in the 1970's is forty years, "new materials will find increasing use in altering, improving, and equipping many of the older homes." Newer dwellings, though, will most likely reflect new thinking.

> Of the new homes being built, a greater proportion will be the relatively low- or moderate-priced housing. High-rise apartments and higher-density, low-rise housing developments will likely make up a larger proportion of the total housing inventory as land values increase in metropolitan areas. The proportionately dwindling middle-age group and some of the older generation will buy higher-priced houses. A good proportion of the younger generation will live in apartments and developments with community facilities. The older generation will tend toward the condominium. (6)

While most of the new housing of the future will most likely utilize the more inexpensive and adaptable building materials, and pre-fabricated stock components which can be selected and combined according to the preference of the buyer are more likely to be in vogue, the possibly more "dramatic" development will be "environment control." Again turning to Carter,

> The average home will not increase in size but will become more functional as to location, interior equipment, and decor. The newer home will be designed for individual appearance and mass production. New materials can expect quick acceptance in direct proportion to the time, labour, and money they save the housewife. The family will be able to select from a number of models the type of kitchen, bathroom, and exterior finish so that the final package will be a composite of stock components unique to the family taste.
>
> The ability to create environmental conditions which can maintain ideal climate, pure air, and freedom from noise, will make available to the average home dweller the seclusion and comfort once limited to those who could afford the luxury of travel to nature's resort spots. Special lighting, enhanced by the development of electroluminescent panels, together with radiant heating or cooling and air-conditioning, will bring these comforts within the reach of millions of families.
>
> New materials--the products of ingenious research and resourceful product development--will be in evidence in all aspects of home construction and daily life. Wall and ceiling panels, made of plastic foam sandwiched between thin metals, ceramic, pressed wood, or plastic sheets, will have light-weight, high-insulation properties and good strength. (6)

Related to the "better living"--or more comfortable living--aspect of futuristic architecture will be the development of technological gadgets which will ultimately free the householder from commonplace chores and give him more leisure time. Among these devices, Carter points out, will be packaged power units which will free many appliances from the limitation of extension cords. The more "dramatic" predictions, however, have to do with the use of the computer in running a household. Daniel Bell suggests that many homes will have educational centers which will include video and audio-retrieval systems as well as the use of a computer, at least on a shared time basis, to provide a complete information system. Bell also foresees some families possessing their own computers to run their households as well as to communicate with the outside world.

While it is risky to accept these predictions at face value--and, no doubt, there are skeptics who would doubt the possibilities inherent in these predictions to be at all likely--several issues should be raised on the supposition that there is even a limited likelihood the architectural future will be as Carter and the AAUW see it. A basic question needs to be asked. Undoubtedly man, in the year 2000, will have the possibility of a high degree of multi-choice in selecting his environment and he will find that his new dwelling will demand less time from him to maintain it. Will this man be able to intelligently cope with such a degree of choice and a greater amount of leisure?

Ecology: Pollution and Purification

Perhaps one of the most frequently discussed aspects of man and his future is the problem of ecology, particularly man's relationship to his natural environment. Generally, this is an overworked topic, usually replete with depressing facts. However, the repetition of such a topic is essential if one is to identify those issues which are of paramount importance and will be of paramount importance by the year 2000. The management of the environment is not only a probability for the year 2000, but it is also a necessity, a life and death matter, due in large part to trends in population increase and to advanced technology.

Caldwell, in Darling, calls attention to this need for a managed environment when he states,

> ... It seems to me that... we must (live in a managed environment) and, in fact, we do, although the management is often by inadvertance. Any natural areas--and I use "natural" here in quotation marks, assuming that man and his artifacts are also in a sense natural--that we have existed by sufferance. It isn't really, I think, a matter of "concentration camps" for wild nature in these set-aside areas of national parks. One must realize that the pressures of the technology itself, meaning the demands upon the environment by the human population equipped with the instruments of the technology and with the perceptions and desires that technology makes possible, involve diverse demands; upon the natural environment this natural world is to survive.
>
> We simply can't let alone any part of this environment and do nothing about it. Somebody will have designs on it. Somebody will intrude upon it. So I would suggest that even though we were to stabilize the population of North America today, we would nevertheless still face the problem of management of the environment, due in very considerable part to the consequences of this rapidly proliferating technology. (8)

One of the obvious ecological problems is that of cleaning up and preserving the water and air. There are few individuals who are oblivious to the need to act on this problem. But the question is "how?" Irving S. Bengelsdorf (2) suggests that "to clean up our polluted waters would cost America from $40 billion to $75 billion in the next 30 years." The question, for him, then, could be, how much is America willing to pay?

Bengelsdorf speculates on some of the possible consequences of water pollution. His specific concern is that of thermal pollution--a pollution in which waste ruined water increases in temperature until the balance of life is destroyed. He cites man's need for more electrical power as one of the chief causes of this type of pollution.

> ... as the country demands more electricity, more and larger power stations will be built. And more power stations means more waste heat to be dumped somewhere. Where is this waste heat to go? It is estimated that by 1980, almost one-fifth of all the water running annually in the rivers of the United States will be used to cool inland power plants producing electricity.
>
> So, the country's rivers, lakes, estuaries and coastal waters will get warmer and warmer. And water that is warmer than usual can have adverse drastic effects on living creatures. So, raising the temperature of water to above normal levels by dumping waste heat into rivers, lakes, estuaries and oceans can have deleterious effects on the breeding, development, and survival of all kinds of plants and animals that are ecologically dependent upon one another.(2)

There are other writers who share Bengelsdorf's pessimistic concern about the future of man's water resources.

In Linn,(36) Jacques Cousteau, the renowned French undersea explorer, has observed,

> In 30 years of diving, I've seen this slow death everywhere I've gone underwater. In the past 20 years, life in our oceans has diminished 40 percent. If it continues, I predict that man has only 50 more years to live on this planet.

Alan Linn(36) points out that "... man has left his 'fingerprints' on every gallon of sea water. Many oceanographers think the 'fingerprints' are indelible." To substantiate this observation, Linn offers the comments of these authorities.

Dr. Max Blumer, organic chemist at Woods Hole -

> The ocean is so big and its circulation so broad, that it's very likely any pollution, of whatever degree, is irreversible.

Regarding the present level of oceanic pollution, Dr. Blumer adds,

> Four or five hundred years would be required to balance its effects.

Dr. Lamont Cole, professor of ecology at Cornell University raises the possibility that the death of the oceans may mean death by suffocation for man.

> A drop in the amount of oxygen in the atmosphere could come about quite suddenly as the result of gradual destruction by toxic garbage of planktonic diatoms in the ocean, which produce 70 percent or more of the oxygen by photosynthesis.

Dr. John Rhyther, Department of Biology at Woods Hole, explains that 90% of the oceans is

> . . . a biological desert and will always be useless as a food source. (The most productive 10% of the sea, those areas close to land,) are probably being fished to a maximum now. (He fears) the world faces the possibility of losing the seas as a food source, just as the population reaches the level where such protein becomes essential.

On the other hand, there are those who believe that the water problem is not beyond control. Linn declares that other experts believe the oceans may be saved--if man acts now.

Linn also points out that

> Dr. Barry Commoner, noted Washington University biologist, warns the 1970's are a 'decade of grace' in which man must rectify the abuses of the sea or watch it die. There may still be a chance as Wesley Marx has said, 'to keep the ocean alive, while exploiting it as this planet's last great resource of food, wealth and fascination.'
>
> Dr. William A. Nierenberg, director of the Scripps Institution of Oceanography, in a cautiously optimistic view of the water problem, foresees "the development of huge floating islands serving as air-

> ports, weather stations, resort hotels, industrial centers, military bases; of large and small vessels speeding over the surface of the sea on captured air bubbles; of submarines operating at all depths; of work colonies on the sea floor, drilling for oil and recovering rare minerals..." Cautions that the ocean we inherit may be one "laid waste by pollution."

> ... efforts by industry, government and individuals have stirred hope where there was none a short time ago. Dr. Commoner, once called the 'dean of doomsday ecologists,' however remarks, 'There has been so much progress in the past five years that, if I'm not careful, I'm liable to become a little optimistic.'

And in addition to these hopeful observations, there are the recommendations of the California Association of Secondary School Administrators report on the "World by the Year 2000."

> The water problem which exists in some regions of the United States and in other countries will be intensified in the next several decades. There are solutions to this problem if enough people can be persuaded to pay the price demanded by these solutions: (a) Large areas of the Sahara and possibly other continents are believed to be underlain by lakes of water-bearing sands; (b) Nuclear energy will provide cheap power that will make desalinization of sea water economically feasible in many of the world's water-short areas; (c) More efficient delaying run-off from the land to the oceans will be the most economical means of taking care of water shortage; (d) We must use and reuse water for industrial purposes; (e) Water must be returned to the river or lake as free of pollution as when it was taken out.(7)

Equal to the concern over the pollution of water is the concern over the pollution of the air. Bengelsdorf observes that thermal pollution is as likely to occur from excessive burning of fuels and pollution of the air as it is from polluting the water.

> In addition to producing smog, by burning fuels we now add 6 billion tons of carbon dioxide to our air each year. At this rate, by the year 2000, it is estimated that there will be from 25-40% more carbon dioxide in our atmosphere than at present. And carbon dioxide is a material which by its presence can alter the heat-content of the atmosphere. It could give rise to melting

> of the polar ice caps, increasing the volumes of the oceans to such an extent that present-day coastal cities would become inundated. Such carbon dioxide increase could lead to marked changes in climate, not controllable through local or even national efforts.(2)

But, again more optimistic, the CASSA report does offer hopeful recommendations.

> Smog will continue to pollute the air until the consequences are serious enough for citizens to demand that smog producing practices cease. Smog will eventually be controlled to a great extent by reduction of combustion as a source of power. Improved batteries and use of nuclear energy will make major contributions to the solution of this problem.(7)

It certainly appears that one of the major causes of both air and water pollution is to be found in man's demands for more and more power to afford him the "comfortable-good life" which is to result from inevitable technological progress. Bengelsdorf observes that

> ...growth in demand for electricity far exceeds the growth of population. Thus, while it is estimated the present population of 200 million Americans will double in about 63 years, the American demand for electricity now doubles every 6-10 years,...(7)

Perhaps an alternative would be to look for other sources of power. While many scientists foresee nuclear fusion as answering the needs of increased requirements of power and also as polluting the water and air to a more minimal degree than is now the case, such an alternative might not be the most desirable. There is, in addition to the great amounts of water needed to cool nuclear generators and the resultant steam (a form of thermal pollution) which nuclear produced electric power would emit, the possibility of nuclear-radioactive pollution of the atmosphere to join the already smog polluted air.

Peter Glaser writes,

> (in the year 2000)... we may have to meet power requirements with energy sources other than those available today. Even the most optimistic forecasts envisage that several decades may pass before fusion power plants are a reality.
>
> ... solar energy is the major future resource...
>
> The attempt to harness solar energy appears today at least as plausible as a manned lunar landing appeared when first planned a little over a decade ago. (20)

In addition to the water and air pollution problems, man of the future may also face critical shortages of other natural resources.

Natural Resources

John Mitchell, for example, believes that the loss of plant and animal species are the most endangered natural resources.

> The irrenewable resources in greatest danger of depletion today are not the minerals that we gouge from the earth but our fellow-travelers on Spaceship Earth, those furred, finned, feathered and chlorophylled cousins of ours that evolved from our common colloidal soup... Since the Pilgrims celebrated the first Thanksgiving, at least 22 species of mammals, birds and fishes have forever disappeared from this continent--which means, in most cases, from this Earth. ...Now another 59 vertebrate species are threatened with extinction... In the U. S., more than 80 species of plants are living on borrowed time. (45)

Mitchell also points out that in addition to losing a variety of species of plants and animals, man, particularly in the United States, is in great danger of losing perhaps an even more essential natural resource: the land he lives on.

> Another great unrenewable resource that is disappearing in the U. S. is the land itself. Now concrete is poured over nearly one and a half million acres of it every year... By 1975...new residential living space alone will annually require a land area nearly half the size of Rhode Island. And new interior roads...will stretch out over 22,000 linear miles--every year.
>
> ... cars and roads and parking facilities...already occupy more space in the U. S. than people do. (45)

However, despite the fact that man is rapidly paving over the land at an almost unheard of pace, the general belief is that the land's residual supply of natural resources such as coal and iron will not fail man in the foreseeable future. Echoing this view is the CASSA report which suggests that "by 1984 he (man) will be changing his environment in order to survive." Either a conservation consciousness will develop or new sources of raw materials will be developed.

Heretofore man has built himself a destructive environment. By 1984, the CASSA report states, he will be changing his environment in order to survive. Natural resources will be conserved and preserved for man's necessities and pleasures. Even without changing his wasteful ways, there appears no reason to believe man will run out of vital mineral resources. Specific predictions about metal and mineral resources include:

> Mining the sea, producing mineral substitutes, and cheaper methods of mining low grade minerals and reclaiming minerals from junk may alleviate the world's imbalance of important minerals and the staggering drain on mineral resources caused by increasing population and a higher standard of living.
>
> The solution to many of the world's economic problems lies in the oceans which contain untapped sources of minerals and other resources.
>
> Steel will decrease in importance at the expense of copper, aluminum, and titanium. Titanium will be the metal of the 21st Century.
>
> Coal, no longer needed for fuel energy, will play essential roles in creating new textiles and plastics. Its use in the chemical industry will keep petroleum production high even when nuclear energy becomes competitive.(7)

Another optimistic prediction, offered by the CASSA report, suggests that man's control over his environment will extend to manipulation of weather and climate. Such a development could compensate for the apparent destruction of the land and natural resources which has existed up through the 1970's.

> According to Vasseliev and Gouschev, who interviewed 20 Soviet scientists, we shall be able in 2000 A. D. to control weather and climate, and make use of artificial rain.
>
> The TEMPO scientists judge that climate control will operate in spectacular fashion. Huge nuclear generators which will supply all of our electrical power needs and the heat generated by these plants could repel the smog layer at 19,000 feet in such areas as the Los Angeles Basin, generating a sea breeze below which would bring rain and make the deserts blossom as far away as Las Vegas.
>
> Lundberg predicts that in the next 50 years we shall be able to exert some extensive influence over the weather, short of controlling it.
>
> Other American scientists believe that political and economic considerations will prevent weather control on a major scale even if the technology is available. Much improved and more reliable weather forecasting, however, will enable man to avoid many major dangers and disasters.(7)

The Population

Although these latter predictions do offer hope in an otherwise dismal ecological-environmental picture of life in the year 2000, when one turns to the question of population growth, there is almost universal alarm. Even the CASSA report, which generally suggests that solutions to ecological problems can be found, is apprehensive. Among the concerns expressed in this report are the following:

> World population in the year 2000 will rise to somewhere between five and six billion, from 65% to double what it was in 1963. This involves a predicted decreasing birth rate and death rate. U. S., Canada and Australia are going to have to feed the world, or help it feed itself.
>
> The crucial question regarding over-population as seen by Dennis Gabor is at what density the equilibrium will be reached: at the

> starvation level or at something worthy of the dignity of man? In some backward regions the starvation level may be reached, but this extreme probably will not be allowed to occur in advanced nations.
>
> Population growth must be slowed down; however, in most nations only persuasion can be used. By 1980 food production in the world must rise by 50 percent. Overpopulation pressures will lead to new values--"childlessness will be in."
>
> As far as population growth in the United States is concerned, it is predicted that it will nearly double by 2000, increasing from 180 million to 331 million. The population will continue to shift to the west and southwest and California will remain the largest state. Five-sixths of the population will be urban dwellers and occupy two percent of the land. Half of the population will be concentrated in twelve states which contain ten percent of the land area. Nearly one-half of all Americans will live within one hundred miles of the ocean. This will necessitate the use of bars, offshore islands, and the building of sand spits.
>
> There will be a radical reconstruction of cities, already partly underway in the United States. As part of such reconstruction there will be developed a public building program going far beyond anything thus far blueprinted by the most imaginative planners of today.
>
> The continuing trend toward urbanization presents problems of tremendous magnitude: urban blight, desecration of the countryside, waste of time and life in traffic, pollution of air and water, failures of public services to keep up with growing demand, and increase in numbers of people who are victims of aggravated assault. Unless drastic measures are taken to reverse the present trend, by the year 2000 we could have black cities and white suburbs.(7)

Bengelsdorf shares CASSA's concern when he states: "Just think of the year 2000 when the U.S. is estimated to have a population of 340 billion." And beyond the potential problem in the United States, the outlook for world population trends, according to Bengelsdorf, is hardly any more encouraging.

> ... world population is now growing at a rate of two percent per year... Between now and the year 2000 the number of people that we shall add as new passengers aboard spaceship earth will be

> greater than the number who exist today. (almost 7 billion by 2000)[2]

There is one sharply dissenting view of population trends. Former U. S. Secretary of the Interior Stewart Udall contradicts the claims of CASSA and of Bengelsdorf and points out,

> In 1968, Dr. Bogue, of the University of Chicago, said that it was "absurd" to suggest that the population of the United States would be three hundred million in 32 years. ... His much more optimistic prediction, based on the sharp trends of the past few years, is that the year 2000 will find the country with a population stabilized at about 220 million.

It might be observed, however, that many people are concerned that even Udall's citation of Bogue's less dramatic prediction is sufficient cause for alarm since even 220 million people, considering the complexities of life today--particularly the United States--are 20 million people too many.

If there is to be a growth in population, both worldwide and in the United States, whether the more conservative or more liberal estimates be accepted, there will be problems which must be faced by future leaders. These problems appear to be centered in two areas: that of urbanization and that of food supply.

Perhaps the problem of urbanization is not as much a problem of the future as it is a problem of the 1970's which will persist throughout the next thirty years. While any attempt to offer solutions to the problem might be, at this point, fruitless, it is important to be aware of the trends. Kahn and Wiener offer the following picture, generally accepted by most students of urban demography.

> Some success seems likely with population control...
>
> The United States in the year 2000 will probably see at least

> three gargantuan 'megalopolises' that we have labeled...
> Boswash - Boston to Washington - 1/4 of U. S. Population - 80 million
> Chipitts - around Great Lakes - 1/8 of U. S. Population - 40 million
> Sansan - San Diego to Santa Barbara and later San Francisco - 1/16th of U. S. population - 20 million
>
> Boswash and Chipitts (will be) separated by Appalachian Mountains and foothills (including Maine, New Hampshire, Vermont, much of North and central New York, central Pennsylvania, western Virginia, West Virginia, and Kentucky. (These areas) may provide playground and second homes for the better off of both megalopolises and attractive sites for aesthetically and recreation minded "post-industrial" organizations taking advantage of improved communication and transport...
>
> ... the three megalopolises should contain roughly 1/2 of the total U. S. population.(33)

While such observations do suggest what is and will be happening in the location of huge populations, they do not address themselves to the attendant issues which may or may not make life in these megalopolises more pleasant. But then, that may be the task of other predictors.

Food or Famine?

The most alarming implication of any growth in the population ultimately must be the potential ability of that population to feed itself. On this issue opinion is divided. Among the more dismal prophets is Paul Erlich, who offers this Neo-Malthusian litany for consideration.

> Agricultural experts such as Professor Borgstrom and the Paddock brothers present a dismal picture indeed. The Paddocks' best estimate of the onset of the "Time of Famines," the time when many tens of millions will starve to death annually, is 1975. How accurate their prediction is will depend on many factors, such as the weather, over which we have no control. It will also depend in part on what actions mankind takes to attempt an amelioration of the situation. I must, however, agree with the Paddocks that massive famines are now inevitable.

Plague presents another possibility for a 'death rate solution' to the population problem.

As more and more people have less and less, as the rich get richer and the poor poorer, the probability of war increases. The poor of the world know what we have, and they want it. They have what is known as rising expectations. For this reason alone a mere maintenance of current levels of living will be inadequate to maintain peace.

We use roughly one half of all the raw materials consumed on the face of the Earth each year. We need the ferroalloys, tin, bauxite, petroleum, rubber, food, and other materials we import. We, one fifteenth of the population, grab one half as our share. ... Even if we are not engulfed in world-wide plague or war we will suffer mightily as the 'other world' slips into famine. We will suffer when they are no longer willing or able to supply our needs.

Virtually all of the land which can be cultivated with known or easily foreseeable methods is already under cultivation. We would have to double our present agricultural production just to adequately feed today's billions--and the population of the Earth is growing, I repeat, by some 70 million people per year. No conceivable expansion of arable land could take care of these needs.

The resources of the sea have been measured and have been found wanting. Most of the sea is a biological desert. Our techniques for extracting what potential food there is in the sea are still very primitive. With a cessation of pollution, complete international cooperation, and ecologically intelligent management we might manage to double our present yield from the sea or do even better on a sustained basis. But even such a miracle would be inadequate to meet the needs of the population growth. And there is no sign of such a miracle. ... All signs point to a reduction of the food yield of the sea in the near future--not to a bonanza from the sea.

Our desperate attempts to increase food yields are promoting soil deterioration and contributing to the poisoning of the ecological systems on which our very survival depends. ... the more we strive to obtain increased yields in the short run, the smaller the yields are likely to be in the long run.

> (There is a) simple choice: lower the birth rate or face a drastic rise in the death rate.(12)

On the other hand, far less pessimistic is the observation made by the Rand study of population in Bell.(1)

> In this society, no one will be hungry. Computers will have solved the problem of the distribution of goods, what to plant, and when and where to plant. There will be a central hunger control agency which will assimilate all of the data needed to predict worldwide food requirements, production, and availability, so that appropriate distribution can be made to all the world's people.
>
> ... it has been predicted that agricultural yields can increase by a factor of ten, and ocean farming techniques will augment our food supply even further.

Also, less pessimistic but still quite concerned about the population problem are Gordon's government directed predictions about what must happen in the future.

> Since it is clear that the drive to increase longevity will continue, the only technique for stabilizing population will be control over the birth rate. Yet, currently, our society rewards large families. In the U. S. , income tax laws grant deductions, and social convention considers childless couples somewhat odd. Most churches encourage procreation, some more forcefully than others.
>
> These pressures will be reversed within fifty years because of the realization of the dangers of overpopulation. The world, in its first joint act, will adopt a limit on population of perhaps 12 billion. The bearing of children will be penalized by taxation according to some graduated formula. The concept of childlessness will be 'in.'(25)

The Challenge

It was suggested earlier that speculation about man's future environment, and its relationship to the larger area of science and technology is generally conceived to be an easier task than speculation about social trends for the future. At the very least such speculation about science and technology and the environment can rely on hard data. Unfortunately the treatment of this data cannot be as comprehensive or as exhaustive as might be desired. In fact, if there is "inevitable progress" in this domain--as many have suggested--then this domain like all domains of the prophet ultimately defies validation. Nevertheless, regardless of how cursory the view might be, there is sufficient evidence and opinion to challenge leaders of the future to be masters of this aspect of the future rather than to be mastered by it.

Perhaps the best summary of any treatment of the future of the scientific, technological, and environmental world can be found in these conclusions of Kahn and Wiener.

> Man is developing enormous power to change his own environment, not only the outside world, but also his own physiological and intra psychic situation... this very power over nature threatens to become a force of nature that is itself out of control... if we cannot learn not only to take full advantage of our increasing technological success, but also to cope with its dangerous responsibilities, we may only have thrown off one set of chains--nature imposed--for another, ostensibly man-made, but in a deeper sense, as Faust learned, also imposed by nature.
>
> ... What is necessary in an unflagging respect for the world as we find it and for dissent and diversity, even for ornery stubbornness... Above all, there must be a concern for perpetuating those institutions that protect freedom of human choice--not only for today's individuals... but more important, for those who will follow us--those who in the future may experience their problems differently and would not want to find that we have already--unnecessarily and unwisely--foreclosed their choices and altered their natural and social world irretrievably.(33)

Once again, the challenge for planners for the future, especially government leaders and educators, is clear.

SECTION III: EDUCATION AND THE 21ST CENTURY

Prophets and Tomorrow's Education

The field of education is not without its prophets. As politicians and social engineers have sought to meet the contingencies of the future with some degree of assurance and equilibrium, they have turned to educators for the means. As educators in turn have attempted to anticipate the needs of society, a mottled mosaic of predictions has emerged.

As with the areas of concern mentioned in preceding sections, the predictions for education range from the dogmatic Toffler(64) extreme, which states that "Long before the year 2000 the entire antiquated structure of degrees, majors and credits will be a shambles," to the 1970 White House Conference on Children Report's statement(68) that "All that we can predict with certainty is that the central issue of the 21st century will be the struggle to assert truly human values and to achieve ascendency in a mass technological society." In many cases, the future is implied from the projection of an ideal. Nevertheless, what does appear certain is that the years ahead will witness massive educational change. The direction these changes will take, however, is less clear.

The Forum #5 report of the 1970 White House Conference on Children, which was concerned with the future of learning, talks of education of the 21st century man as an "enabling process rather than an instructional one." It goes on to say that such an approach requires "opening the whole of the world to the learner and giving him easy access to the world." The ideal goal of educators of the future should not be just to impart information, as Heath(30) points out, but to help students to become more educable for 1984 and now. What these statements imply is that the schools of the future may well be radically different in philosophy and organization than those traditionally known.

Individualized Learning

Undoubtedly, education will be directed toward increasing student freedom and fulfillment of self. Such an occurrence will be in direct response to the need stated in *Schools for the Seventies and Beyond: A Call to Action:*

> While not losing sight of valid purposes, schools must now go beyond their previous role of preparing children for social functions, whether their functions are traditional or in line with our changing society to preparing children to become totally realized individuals--humane, self-renewing, self-directed individuals who will not only survive in society, but will take a conscious role in shaping it for the better. (17)

The student under these circumstances will be viewed by the school as an individual capable of becoming a total person. As Fantini and Young point out in *Designing Education for Tomorrow's World,* (14) "Attention must . . . . . be paid to the development of talents and personal interests to encourage an awareness of self and a sensitivity to others in the world around." Their plan for the future calls upon the school to individualize instruction so that it is "based on the student's characteristics, modes of learning, and objectives. It will be self-paced and continual and designed to challenge the student to develop his interests, aptitudes and special talents through the use of special staff, facilities, and a variety of approaches from infancy through adulthood. . . . Every student will be helped to develop a positive identity or self-concept and a sense of potency and power through active participation in the educational system in the community."

This trend toward greater individualization of instruction will dominate the educational scene during the next century. "The entire educational enterprise will be directed toward increasing the freedom and power of the individual to shape himself, to live at ease in his community and in so doing, to experience self-fulfillment."(68) As Goodlad notes,

> The first step in this reform is provision for and encouragement of different paths to common ends. Students will be free to select computer programs, books, records, films, visits to museums, or even to decide whether or not to attend school on a regular basis. The second step is the opportunity to select a few from many alternative goals. Our view of what is worth learning will be extensively broadened so that much of what is now outside the school curriculum will be enhanced by it. The third step is self-determination of one's educational goals and how they are to be achieved. (22)

Process-Oriented Curriculum

In the process of transition to a more personalized educative process, the curriculum will undoubtedly also change. As Ralph Tyler states in Morphet,(46)

> "The goals of education appropriate for a future that will include many surprises will include a strong emphasis on problem solving, upon learning how to meet new situations, upon the skills of observation, analysis and communication and upon the development of attitudes appropriate to change."

Tyler's prediction is reinforced in a statement by the NEA Center for the Study of Instruction(47) which says,

> The curriculum must move away from an emphasis on the retention of facts to emphasis on the processes of inquiry, comparison, interpretation, and synthesis. In addition to purely intellectual growth, the curriculum should regard emotions, ideals, ambitions, and values as legitimate areas of concern for the educational process and should emphasize a student's need to develop a sense of respect for self and others. Such a curriculum demands a reordering of the priorities of the school and an instructional program which will be reflective of the new order.

Humanistic Trends

What is implied by the above is that education of the next 30 years will be to a large extent humanistic in orientation. Goodlad, Leonard, and Silberman agree upon this point. Leonard's description of Visiting Day 2000(35) is particularly relevant. "As we go through the school, we pass children of various ages and various states of consciousness. Some are walking aimlessly alone or in small groups, perhaps toward some destination, perhaps not. Others are running. We notice a group of around seven of the older children with two of the educators in impassioned encounter near one of the biggest trees." One gathers a sense of freedom and enjoyment in which what is human is valued--the exact opposite of the mindlessness described by Silberman. Not all, however, are sure that this trend will in practice be able to overcome the status quo. Green, for instance, states:

> It seems to me likely that humanistic education will continue to provide the educators ideology, but that managerial education will continue to represent reality. That is to say, the most likely development is that educators will continue to place primary importance on distributive values in explaining their efforts to themselves, but when important issues are raised influencing the structural relation between school and communities, the aggregate values of managerial education are likely to prevail in their actions so the professional ideology is likely to be humanistic, but the operational ideology is likely to be one of social utility. (36)

Green goes on to say that what is likely to result is not a society in which education for leisure will predominate in a humanistic mode, but one in which there is a very high level of managerial education for an elite and a lower level of managerial education for the majority. Be this as it may, there is agreement that humanism will continue to gain ascendency as the overriding philosophy of American education during the decades ahead.

Along with the new humanism will come a new view of education itself.

Lippitt states,

> The role of education will be dramatically different in the future. This trend is already visible. The need to learn and the process of retraining will continue throughout a person's career and life. With the growing rate of change in occupational and leisure time, opportunities and life requirements, the increased rate of production of new knowledge will add greatly to the status of educational programs. There is much agreement among students of the future that education will become less and less a matter of transmission of accumulated knowledge and more and more concerned with developing the thought processes, values and skills that prepare individuals for change and actively initiate change. Versatility, flexibility, and problem solving ability will even be more important educational goals. It seems probable that a large portion of the population will go through as many as three jobs in a lifetime because of automation and obsolescence of work skills. There is obviously a tremendous implication of retraining and re-education as continuing processes. (37)

Man and Machine

The impact of computer technology on schooling cannot be neglected. Although opinion regarding the extent of its use by the year 2000 is divided, it cannot be denied that it will ultimately be an essential part of education. With regard to educational technology, Goodlad(33) predicts that,

> The era of instruction that will supersede the era of human-based instruction is to be one of man made, machine interaction, and the machine is the computer. We havq lived in the shadow of the computer long enough now, but used it so little in instructional affairs that we may be inclined to believe its future and our own to be things apart. Nothing could be further from the truth.

He goes on to say that he does not see the computer as the human teacher's competitor, but rather as replacing the teacher for many instructional tasks which the computer should do and indeed can do better. The California Association of Secondary School Administrators Curriculum Committee, in its report,(7) refers to Multi Media Learning Centers in which information needed by students and teachers or the community will be immediately available. Such information will not be stored in books, but in computers which have terminals installed in office buildings, large apartment houses, and neighborhood centers throughout the city.

Leonard(35) goes so far as to predict that at any time during a child's interaction with the computer, four variables will be at hand:

> (a) a full bank of the basic commonly agreed upon cultural knowledge arranged in dialogue form; (b) basic material arranged in cross-matrix stimulus and response form; (c) the child's brain wave pattern analyzed in terms of general consciousness and short-term memory strength; and (d) the child's overt motor responses as typed on the keyboard or spoken into a directional microphone.

Process education which will stress learning how to use facts will be essential in the era of the computer.

Organizing for Tomorrow

Given the thrust toward expanded humanistic individualization of education and the near certainty of massive technical change in the educational system, a number of futurists are predicting the necessity of structural and institutional change in order to accommodate the innovations proposed. The Committee for Economic Development(62) says:

> It now seems likely that free education will be extended downward to younger and upward to older citizens. Kindergartens are already commonplace and the junior college movement is sweeping the country. Free nursery schools are being advocated by educational leaders and greater numbers of employed adults are returning to school to refurbish their present skills and to acquire new ones. The lines between the school and the outside world are likely to become blurred. Within the school itself, conventional organizational structures and traditional role definitions seem destined to change. Elimination of early grade placement as an instance, is already being experimented with in nongraded and multi-level classes. As practices of this sort spread as there is every reason to believe that they will, students might be able to move through the school at different speeds creating even greater educational variability than that promised by

> the introduction of teaching machines."

A similar note is sounded by de Brigard and Helmer(10) when they state that education is definitely expected to become more decentralized and/or diversified perhaps slowly at first, but increasingly so towards the end of the century. Urban elementary education is designated in particular as decentralizing at a moderate rate through the remainder of the century. "For this to happen," warns Silberman,(58) "it is not just the curriculum that will have to change, but the entire way in which schools are organized and run." Seemingly with the decentralization of authority and control and perhaps because of it, the schools will move away from their traditional organization. As Goodlad indicates:

> Every single decision governing a school was at one time or another made by man. At the time the decisions today governing schools were made, less data were available. The men who made the decisions were no brighter than school men today and they were less well educated. Therefore, it behooves us to reexamine every decision about schooling: size of building and whether we want one at all, numbers of teachers and whether we need a fully certified teacher for every 28 1/2 children, whether there is to be a library that houses real books or if the library is to be a computerized one--a fully automated library with no books but only microfiche is now out of the realm of science fiction and into the actuality of college and university planning in the United States."(33)

Toffler(56) carries the matter still further when he says,

> The schools of the future, if they wish to facilitate adaptation later in life, will have to experiment with far more varied arrangements: classes with several teachers and a single student; classes with several teachers and a group of students; classes organized into temporary task forces and project teams; students shifting from group work to visual or independent work and back. All these and their permutations will need to be employed in order to give students some advance taste of the experiences they will face later on when they begin to move through the impermanent organizational geography of super industrialism. What appears clear is that

> schools will move outside their traditional parameters in a variety of ways."

The 1970 White House Conference on Children Report(68) states:

> Compulsory education--or compulsory attendance as it might be called will be a thing of the past. School as we know it will be replaced by a diffused learning environment involving homes, parks, public buildings, museums, business offices and guidance centers. Many such resources that are now unofficial, unrecognized, unstructured or unsupervised and even unused, will be endorsed and made fully available for learning. There will be successors to our present schools--places designed for people to gather for the purpose of learning together.

In the city of 2000 and beyond, for example, "The old high school will be replaced by a beautiful air conditioned building on a 100 acre educational park. The school enrollment will have grown to 8000 with regular high school students commuting from all parts of the city on a high-speed, computer-operated transit system. Also located in the park will be all types of athletic stadiums and field houses, theaters, art centers, and facilities for many kinds of continuing education programs... The principal job of teachers (will be) to teach the students how to learn and by example, to inspire in each child a desire to keep on learning for the rest of his life."(7) Leonard(35) describes the elementary school of 2000 as being a place where "a total of 800 children between three and ten are enrolled, but on a typical morning only about 600 are on the school grounds. Most of the educational environments are in operation from 8:00 in the morning to 6:00 in the afternoon. Children can come when and if they please. While the children are on the school grounds, they are absolutely free to go and do anything they wish that does not hurt someone else. They are 'free learners.'"

Once the teacher's role has changed and the walls of the school have expanded, a wider range of human resources in the persons of parents, sub- and supra-professionals will become available. Toffler suggests that as we move toward knowledge based industry and greater leisure time, we can anticipate a significant tendency for highly educated parents to pull their children at least part way out of the public school system, offering them home instruction instead. This may represent an extreme point of view; however, others are at least supportive of the ideas that the home will become a more significant factor in the formal educative process during the century ahead.

> "Children and their families will be responsible for setting educational goals and mapping the route toward them. Plentiful assistance and advice will be available if desired in planning highly flexible and individualized schemes for learning, but it will be left to the learner and when he is very young, [illegible] family, to choose among alternatives."(68)

The assistance mentioned above will come from school staff people. Philip Jackson is quoted, in Silberman,(58) as saying that teachers will be indispensable since we must rely on human beings to maintain a firm sense of direction and a commitment to the preservation of human values in the schooling process. However, he also predicts that

> "as the school extends its influence and as the work of the teacher becomes more specialized, the staff of the school is likely to increase in two directions. First, there will be more of what might be called supra-professionals, persons with a high degree of expertise to whom the teacher might turn for consultation and advice. To the conventional specialists of school psychologists, curriculum supervisors, social workers, and the like will be added school community specialists, evaluation experts, teaching material consultants and others. Second, there are almost certain to be more sub-professionals in the school, people who have less training than the teacher who might take over some of the clerical and routine aspects of the teacher's task.(58)

Education as an End

With this changing view of the school and its mission will come a new appreciation for education and its place in our culture. Where formerly it was seen as a means to further the industrial sophistication of our country and to enhance the status and wealth of individuals, the new view will tend to emphasize education for its own virtue.

"When we look at education in the century to come, we can see learning not as a means to an end, but as an end in itself. Education will not be an imitation of life, but life examined and enjoyed. A prescribed age for beginning to learn--or for ceasing to learn--will be meaningless, so will age for determining what needs to be learned and so will the status school day and the academic year."(68) This will mean that children will be starting the educative process much earlier--perhaps as young as 30 months after birth--and continuing until long after our traditional termination point.

Prophecy, Problems, and Predictions

Long-range prediction is at best a risky business. As is exemplified in what has been written here, there is considerable controversy among those who undertake to talk about tomorrow as to just exactly what that tomorrow will look like. Frequently, extremes are represented; frequently, no two authors are in agreement. Yet by extrapolating from the specifics it is possible to come to some understanding of what must be considered if the future is to be dealt with in any kind of systematic way.

This section of the report has so far been largely concerned with what educationists have said about the future of education. To summarize briefly, if what is predicted occurs, it appears that within the next fifty years education will (a) undergo massive change, (b) be much concerned with human values and a humanistic approach to learning, (c) be highly individualized, (d) be largely directed toward increasing freedom and experiencing self-fulfillment, (e) utilize technology to enhance the learning opportunities, (f) utilize the resources of home and community for a total educational experience rather than being confined by school building walls, and (g) be considered a lifetime undertaking. There is at this point in time no reason to believe that such predictions do not represent the reality of the century ahead, barring, that is, the occurrence of any critical incident to cause the course of mankind's destiny to be violently changed. What appears likely is that the 21st century will witness a considerably changed scene; however, such change will represent the cumulative result of incremental movement occurring at the current or an only slightly accelerated pace. In light of the predictions laid out in the previous sections by experts in fields outside of education, it is clear that educationists dare not be unaware of the implications of these predictions as the 21st century approaches. The problem is to determine what demands will be placed upon education and which of these demands can actually be satisfied.

In all the areas of the research there were predictions of change during the next century. If judged from the perspective of the future looking backward these changes may appear to be climactic; from the perspective of the present looking to the future these changes may be imperceptible but nonetheless quite real. Amid these circumstances, however, man will retain his humanity. If technical and social advances tend to alienate him from his environment and his fellow men, it will fall to education to furnish him with the tools to maintain his equilibrium in a constantly unsettled world. In the present state of affairs, research indicates that human beings are upset by and resist change. Schooling will likely have to turn its attention to helping individuals to deal with their own fears and to see changes as desirable or at least as a constant part of life.

If diversity is to be the theme of the century ahead, certainly the educational process will have to come to promulgate a pluralistic approach in all areas of life. The acceptance of and preparation for a wide diversity of life styles may well become the main task of the educational process. Most certainly attention will have to be given to helping individuals examine their own value structures and to the process of teaching new values. Man will be the center of interest and mankind the sphere. The texture and tenor of life will necessarily become a vital part of the school curriculum. If transportation and communication advances cause the circumference of the earth to be drastically reduced, one must learn to live with men of vastly different cultures and mores. The educational process will be called upon to furnish the necessary knowledge and perspective. Such a repertoire will demand a respect for the rights of other humans to enjoy the best of life and an unspoiled environment.

In a century characterized by a birth-to-death educational program, careful planning will be necessary in order to harness the resources needed to provide a sequence of enriching experiences that will lend meaning to human existence in a period of increased leisure and freedom. For the most part, the movement to the future is a movement along separate tracks. The world of science, for example, still remains separate from the world of humanities.

Such a division is not desirable. What will be necessary is a master plan for human development and education worked out not by educationists alone, but by the combined efforts of all social and life scientists. New bridging professions may have to be created to increase the flow of relevant findings from one profession to another. Once education becomes the warp and woof of life, it will, as has been predicted, quite easily move outside the confines of school walls.

Given the forecast of architectural advances of the next fifty years, and increased urbanization of population accompanied by increased mobility, serious questions must be raised about the advisability of creating large school structures with a life expectancy of fifty to seventy-five years. If the child-bearing population is essentially to be centered in densely settled apartment complexes, school districts might well consider construction of educational centers within the high-rise buildings being planned. Such centers could be used for all age levels to expand the phases of education from preschool to geriatric involvement. Increased mobility across greater areas of our country may call for consideration of regional or national curriculum planning to reduce educational disorientation of people as they move from place to place.

Paramount in the world of tomorrow will be the utilization and control of complex technology. As a consequence, educationists of the 21st century must be prepared to integrate sophisticated audio-visual equipment and computers into the educational process. While it is not expected that the use of such devices will eliminate the need for the teacher, nevertheless the role of the teacher will be altered by the presence of such equipment. The necessity for long-range research and planning is clearly indicated.

Recommendations

Faced by such contingencies, it behooves the educational establishment to begin preparing for what is to come. In light of the foregoing, the following recommendations are made:

1. It is recommended that the office of the U. S. Commissioner of Education be elevated to cabinet rank in order to exhibit the priority the nation places upon education.

2. It is recommended that a body be created at the national level to advise the government and bring to the attention of the nation critical issues related to the human condition. It is further recommended that this body be composed of renowned representatives from all the social and life sciences.

3. It is recommended that moneys be allocated for long-range research on the acquisition and teaching of values and the appropriate adaptation and use of computers in the classroom.

4. It is recommended that money be allocated for development of curricular strategies and materials which, in the schools, will effectively deal with the problem of eliminating racism from American society. It is further recommended that these strategies, utilizing their materials, be implemented as soon as possible.

5. It is recommended that the recommendation of the White House Conference on Children and Youth, Forum 5, be fully implemented.

6. It is recommended that moneys be allocated for the establishment of educational computing networks on a regional or national basis. It is further recommended that priority be given to the research and development of software

appropriate to the educational context.

7. It is recommended that a needs assessment be made to determine the long-range personnel requirements of the educational establishment, both academic and paraprofessional.

8. It is recommended that workshops for in-service and pre-service personnel be provided in the teaching of values and the use of educational technology of all kinds.

9. It is recommended that money be allocated to undertake a status study of the curriculum at all levels of public education as a prelude to designing alternative curricula.

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President's Commission on School Finance

Report of Task Force B

EDUCATION IN 1980

by

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INTRODUCTION

Schools of today are very much the same. They have been visited and analyzed by many observers and the interpretations of the observers are abundant in educational literature (60, 70, 80). The composite picture presented by these reports of what goes on in the schools of America is very depressing to those who hold a much different vision of what schooling could be (18, 65, 67, 70). Many characteristics of schools as they exist now should be changed.

The changes described in this section are in response to criticisms which have been forcefully documented by various educational writers. An array of educational goals for each local school should be carefully and thoughtfully evolved and implemented as directions for the school program rather than shelved in the principal's office to gather dust through year after year of nonuse. Curricula and instruction should be individualized to a high degree rather than standardized where individuals are forced to move at a common pace which bores the academically able students, confuses or loses the slower students, and ignores the individuality of all students. A wide array of instructional materials should be available and used in the schools rather than a few texts, library books, a record player, and the occasional movies now being used as learning materials. The entire resources of the school should exist for the purpose of facilitating learning. The principal and supervisors should not serve as enforcers to make sure that state and local requirements about minutes per day spent on reading are all accounted for and that plans for instruction on the evils of drug abuse, alcohol and smoking do appear in the teacher's lesson plan. Community resources such as museums, government offices and services, businesses, industries, parks, libraries, buildings and people should be considered and used as an inherent part of schools. Schools should not be contained within four rather bleak, barren, drab walls.

The many characteristics and resources of students which they possess by being themselves and which they bring to school should be valued and capitalized upon as being significant resources in the learning process rather than being washed out or ignored. The involvement of students in their own learning should increase with a resultant growth in eagerness and enthusiasm on the part of the students. Teachers should become resources and guides rather than sources of authority and founts of wisdom. The vertical and horizontal organization of the school should be such that no artificial barriers are placed upon the process of learning for any individual and that an array of adult resources be available through careful deployment of resources, professional educators, paraprofessionals, and lay adults. Space at school should be open, flexible, and available for students to use in their learning rather than closed off in boxes. Time should be considered a resource for students to learn to use as a precious, limited commodity rather than to be filled often with rather meaningless, inappropriate activities for many students.

The gap between educational vision and educational reality must be closed. In order to begin to close the gap, much planning and hard work must direct any intervention to bring about desired changes. The planning must be of the type which Shane (and reinforced by Isenberg, 85) has called planning of the future as opposed to planning for the future (145). This difference is a significant one--we have control over the future of our schools and the future can be shaped from alternatives which now exist in some form. Planning for the future suggests that only one change route lies open for the schools and planning occurs to make this route smoother and straighter. Such is not the case with schools. Options in the patterns and models of schools are now available and are being utilized, as Fantini (84) has observed, in a number of places. Options are also being developed which are outside of the formal structure of public education. For example, there are now in operation free schools begun by disgruntled teachers and parents who want something quite different than the typical neighborhood school (140), street academies which have street workers or recruiters going out on the streets looking for dropouts so that they can be lured back into the educational process in a much different way than is represented by most schools (131) and job corps which make productive citizens out of the hard-core unemployed through an educational process. Joyce describes vividly four different models of schools and how one model has been implemented in practice (88), while Goodlad and his associates portray a concept of an educational institution that is not a school but, rather, is a "community culture center" potentially serving all ages in a variety of ways (59).

These models represent visions which can become reality if intervention occurs. Models such as these will not become reality, however, unless deliberate planning of the future for schools is done and unless intervention occurs to implement these plans. Unfortunately, forces exist which operate to impede desired changes and to maintain the status quo in schools. These stumbling blocks to change must be recognized and considered.

Unless positive intervention for change occurs with sufficient strength, schools will be schools—will be schools—will be schools through the 1970's, the 1980's, the 1990's.

In order to discuss these needed developments in educational change, the writers of this report survey the range of resources and alternatives which exist in selected dimensions of schooling. These resources and alternatives must be carefully analyzed and wisely selected to guide the planning of the future for schools. A list of educational assumptions, therefore, follows this section which serves as criteria by which the resources and alternatives may be analyzed and selected in order to achieve the aim of this commission: to allow each student in our society to achieve his maximum educational potential.

The educational assumptions are followed by sections on selected dimensions of schooling: goals, curriculum, instruction and resources, evaluation, and organization of the school in time and space. The sections on these dimensions summarize trends being projected, dominant theories being reflected in the literature, documentation of current practices reflecting varying theoretical positions and the array of alternatives which may exist within each dimension.

In a final section we, the writers, select those trends, theories, practices and alternatives within each section which are in most agreement with our educational assumptions in order to determine which of them will contribute most to achieving the goal of this task force--allowing each student in our society to achieve the fullest possible development of his educational potential.

SECTION I: EDUCATIONAL ASSUMPTIONS

These assumptions are believed to be basic to the diffusion of quality education as this report defines it.

1. Education must be designed for a self-renewing and changing person, society and world. It is essential that people be assisted in their personal development to accept, adapt to, and anticipate change. Thus, the development of inquiry and problem-solving skills and attitudes is more important than a fixed body of knowledge. This emphasis must be reflected in every aspect of the school--the planning of curriculum, instruction, the learning resources, organization, evaluation, human interaction and roles, and the general climate or spirit of the school.

2. The education process should be reflective of the plurality of our society and of mankind, accepting of and encouraging a variety of life styles. The variety of values within our own society and in the society of man, and the overt behavioral expression of them as differing life styles, have become increasingly recognized and accepted over the past decade. A concern and commitment to allow for the expression of differing values of others must be a part of the life styles of all members of a pluralistic society. The schools and all other institutions concerned with education must provide the opportunities to explore and develop various life styles within the constraints of showing respect for differing views within society and for the welfare of mankind.

3. Education is the task of the entire community with various institutions contributing to growth in different developmental areas. Education begins at the moment of birth (perhaps at conception) and should continue until the moment of

death. Education should be viewed in such a way that all resources of a community are used to enhance the educative process at all stages of life. Education is a life-long process, with formal schooling as an intensive, but limited part of the process of education. Schooling contributes to the development of students but it does not bear the full responsibility for all areas of human development. Schooling does bear prime responsibility for helping students acquire certain skills--at a minimum those of verbal and quantitative communication and those of rational problem-solving. It also bears responsibility for helping students acquire certain attitudes and values--those involved in living within a democratic society and in the society of man. Other social institutions, however, must recognize their contributions to the educative process and accept responsibility for certain areas of human development. For example, the family should influence personality formation more than the school. Religious institutions must accept major responsibility for spiritual development. Civic and social groups must accept more responsibility for influencing children's attitudes toward responsible social action. Formal schooling is only part of the educative process. The education of any individual is influenced by the larger culture and the impact of all its institutions upon him.

4. Public schools should act as a unifying force within a democratic society. Public schools, therefore, must have the mandate and resources in order to function in this way rather than have resources diverted to other non-public educational institutions. In order to be unifying force, each school must provide an array of alternatives to provide for the inherent differences among students.

5. Schooling must be planned for maximum self-realization, guided by a concern for and a commitment to mankind. Each person should be assisted to

know himself and to develop to the fullest possible extent his potential--his abilities, interests and aptitudes. This concern for the development of the individual must be coupled with a concern, respect for, and commitment to mankind. Each student must be assisted to transcend himself and his own segmented views, values, and interests to incorporate within his perspective a commitment to mankind.

6. The program offered by each school or educational center should be broad enough to encourage each student to develop his unique interests and abilities. Although it has prime responsibility for the rational development of its students, the school must also contribute to growth in other developmental areas: emotional, conative, social, moral, physical, artistic and aesthetic. The individual talents and abilities of each student should be identified and fostered within the resources available to the school.

7. Any school will provide alternatives in order to provide each child with the opportunity to fulfill his educational potential. The all too familiar patterns of traditional schooling which have been well documented and denounced need no longer be the models for all schools. A variety of alternate models and programs now exists and could be implemented. Each school in a pluralistic society will have some common features as well as some distinctive aspects. Certain skills, attitudes, and knowledge are essential to all members of a democratic society and a mankind society but at the same time, there are many options which can--and should--be provided by the schools in a pluralistic society.

8. Schooling requires professionals who have a broad understanding of human development and specialized competencies in those areas of skill and attitude development for which the school is responsible. The nature of pre-service

training and in-service training must be commensurate. These professional people must then have the authority to make and carry out decisions concerning the ways in which students are instructed, consistent with the broader objectives of the community in particular and society in general. These professional people must also bear the responsibilities for those decisions.

SECTION II. GOALS

Goal Setting: Some Problems

The [illegible] goals of schools are generally conceded to be important but in practice, they tend to be quite ineffectual if, indeed, they are considered or implemented at all. There is much confusion among writers and others what is meant by each of them in this dimension of schooling. Goals, functions, outcomes, aims and objectives of education are all common in the literature. The one essential characteristic they have in common, however, is that they are all concerned with what the school should do with regard to its students, with directions in which the school should go. Since the work of the Committee of Ten and the Committee of Fifteen (118, 117) even before the advent of the 20th century, the goals of the school have been a topic of public debate. The debate continues today while the schools pay little more than lip service to what their efforts should be accomplishing. A report of the Eight-State Project suggests a number of reasons why goals are often ineffectual in the daily affairs of schools (8). Among the reasons stated are: goals threaten people; language of goals is often emotionally loaded; implications from the broad level of generality at which goals are usually written are not clear; persons who are to implement the goals are not involved in their formulation; goals often are not concerned with the structure of the curriculum; teachers have security in doing what they have [illegible] [illegible] [illegible]; [illegible] seems to be reached when a common set of goals is proposed and often generates a disparate variety of goals (people with different backgrounds).

A number of publications of historical significance have dealt with what the aims of the school should be. In The [illegible] Cardinal Principles of 1918 (113)

[illegible]

[illegible]

[illegible]

The possible goals for the secondary school were organized according to three directions of growth: growth toward self-realization, desirable interpersonal relations in small groups, and effective membership or leadership in large groups or organizations. Within each of these directions, four areas of behavioral competencies were identified: intellectual growth and development, cultural orientation and integration, physical and mental health, and economic competency. Within each of these latter (cells produced by the two dimensional grid), two levels of development were recognized: illustrative behaviors for mature students and illustrative behaviors for less mature students.

There have been several analyses (within recent years) of how educational goals should affect practice. These analyses are both practically and theoretically oriented. In one of these analyses, Joyce outlines three possible missions for potential school goals, and he also outlines the necessary steps for attaining these missions. The three domains of potential functions of schools which suggest the mission of the school that Joyce in turn suggests are: the academic domain (structure of knowledge, modes of inquiry and information from the disciplines), the personal domain (self-organization or self-concept, personal meaning, aesthetic capacity and motivation to achieve), and the social domain (enculturation, internationalism, nationalism and human relations).

Also affecting a choice of goals for a school are the four points of view toward education which Green has identified. Depending upon its point of view, a school would provide one of the following types of education:

1. Managerial education in which inculcation of the values of the society is a major aim of the school;

2. Traditional education in which the major attempt is to preserve an identity of a particular group such as Afro-Americans or Chicanos. The goals of such an approach would emphasize the distributive values--that is, a range of values important to the individuals composing that group;

3. Humanistic education in which the goal of the school is upon distributive values or the values of each individual and the function of the school is to maximize the development of the individual; or

4. Religious education in which the focus is on the transcendence of self to something that is considered to be holy.

Each of these views of education would suggest quite different goals for a school which had adopted one of these views. Green suggests that managerial education has been and will continue to be dominant in practice while humanistic education will be the ideal which educators will espouse. However, the discrepancy between the potential goals within the managerial and the humanistic views of education will cause quite a dilemma for educators for some time to come.

Reavis and Good state that American education is preparation for citizenship in a very broad sense (143). They note that the development of the individual to his fullest capacity is the major purpose of education and that this development includes economic and social competency for each student. Among the most important objectives and responsibilities for school, they include critical and effective methods of thinking, development of curiosity and creativity, useful work habits and study skills, constructive social attitudes and relationships, a range of significant interests, appreciation of the fine arts, social sensitivities, personal and social adjustment, effective communication and expression, important information and knowledge, physical and mental health, ethics, and a consistent philosophy of life (143).

Goodlad has developed a conceptual system which is built upon defining educational goals at three levels: the societal level at which the school board as a representative group defines the goals of the school for the local community, the institutional in which the superintendent and principal as transactional agents translate the broad societal goals of the school board into more specific goals for the school, and the instructional level where the teacher and students implement the institutional goals into even more specific ones for instructional and learning purposes (72).

The report of the Eight-State Project suggests that an analysis of many statements of goals for schools can be condensed into four general categories of concern: (a) intellectual goals, (b) practical goals, such as vocational education and driver training, (c) personal goals for self-realization of the individual, and (d) moral and ethical goals which are concerned with the attitudes and values of our society and of its citizens (8). Another report of this project adds two other categories of goals: (e) social development and interpersonal relations and (f) citizenship and civic responsibility (30).

Tyler suggests there are three prime data sources for determining the objectives of the curriculum: subject matter, the student and society (172). Each of these has been tenuously investigated as a basis for objectives, but by far the dominant one has been, is, and may continue to be subject matter. Using subject matter as the prime data source, the goals of the school are defined largely to impart a body of knowledge and skills to the students. Even the more innovative schools such as the John Adams High School in Portland, Oregon (137), and the British Infant Schools which have generated much interest in America as an innovative model of schooling (145, 182), place great emphasis upon the goal of a school to concentrate on subject matter, particularly basic skills. In fact a trend in setting educational goals appears to continue to be centered on subject matter. The use of this data source no doubt will be reinforced if the trend toward accountability increases and if it has significant impact at the institutional and classroom levels of decision-making. Also, the current trend toward behavioral definitions of instructional objectives will undoubtedly remain a popular one as long as subject matter remains the prime data source for goals. Since the publication of the Tyler rationale and the Eight-State Report, the behavioral objective movement has gained considerable impetus--even in a narrow restrictive sense-- as is now reflected in numerous other publications (15, 94, 98, 126, 127, 135, 155). While Tyler (172), and now the three taxonomies (15, 94, 155), refer to broad levels of behaviors to be used in defining the behaviors for stating educational objectives, later publications refer to more specific kinds of behaviors (98, 135).

A new force in education is occurring, however, which may counteract to some degree this dominant focus on subject matter. This new force is a concern for a humanistic approach to education. This approach corresponds to that new force identified by Green (75) in which the major focus of the school is upon the maximum development of the individual, a force sometimes called self-actualization. The British Infant School model certainly takes note of this force, as well as of the need for a concern for the basic skills (145, 82). The free school movement (cf. Rasberry, 140) emphasizes self-actualization as the prime goal of schools. The New York street academics emphasize helping the individual solve his personal-identity needs as a prime goal, even though subject matter plays an important role at higher levels in the academies (121). Toward a Mankind Curriculum emphasizes using the development of the individual as an inherent part of the curriculum, but extends this to include self-transcendence and a commitment to mankind (71).

Despite the behavioral objective and its counter humanistic curriculum movement, there are no specific trends being projected and reported in the literature on goals for the decade 1970-1980. Nevertheless there are several directions for educational goals in the seventies. They are

1. An increase in goals emphasizing the development of the individual and the non-cognitive domain (see Section III, 7, 8, 9);

2. A continued emphasis upon goals emphasizing the subject matter orientation of schools (see Section III, 2, 4, 5);

3. Some attention being paid to an examination of the problems of society and mankind as goals of the school (see Section III, 3, 4, 5).

It is apparent from the preceding discussion that goals have received much consideration in educational literature and some attempts are being made to make statements of goals explicitly implemented in the daily operations of schools. What is not clear from the current literature, however, are the difficulties involved in the process of implementing goals into educational programs. It is this aspect which is in need of serious and rigorous study. Therefore, it is imperative that studies be conducted regarding how a range of goals can be established at the local school level and that serious study be made concerning the implementation of these goals in the local school program.

If the anticipated directions in setting goals for the schools prove to be accurate, there may well be some conflict and discrepancies in stating and implementing goals representing both the subject matter and the humanistic-affective domains. Even though the subject matter curriculum lends itself to measurable behaviorally stated objectives far more readily than does the humanistically oriented curriculum in the affective domain, both appear to have projected importance in goals of schools in the 1980's. Therefore, careful consideration must be given to appropriate ways of stating the array of goals--in both domains--needed by schools in a pluralistic society and to the implications these statements have for implementing them into the educational program.

SECTION III: CURRICULUM

Theoretical Basis for Curricula

If and when educational goals are set, a critical factor involved in translating them into meaningful school experience is the proper development of curriculum. Previous to 1950 the curriculum was viewed by most educators as being largely a body of content which students were to master. While various people argued for different ways of deciding what was to be learned, the curriculum was largely viewed as subject matter. The only strong exception to this view was taken by John Dewey and some of his followers. Dewey and some leaders of the Progressive Education movement tended to place the child and his needs, abilities, and interests above the importance of content. Even so, Dewey and his disciples considered content to be important.

In 1950, Ralph Tyler published a small monograph which could be considered the bible of curriculum (172). In this monograph, Tyler identifies four basic questions by which the curriculum of a school could be planned and studied. These four questions are

1. What educational purposes should the school seek to attain?
2. What educational experiences can be provided that are likely to attain these purposes?
3. How can these educational experiences be effectively organized?
4. How can we determine whether these purposes are being attained?

These four basic steps of determining objectives, selecting learning experiences, the organizing of learning experiences, and the evaluation of learning experiences have become the model for much of the curriculum inquiry which has occurred since 1950. Most of the textbooks on curriculum follow this basic outline by Tyler. Unfortunately, however, these four questions have not been considered in relation to each other very often in planning and developing curricula.

Tyler identifies three data sources for determining the objectives of the curriculum: subject matter, the student, and society (172). Tyler makes the significant point in his discussion of these three sources, however, that no one single source was probably adequate for building a comprehensive school program. A school curriculum requires the use of all these sources for generating objectives. Tyler also states that the objectives of the curriculum are to be defined in terms of the content the student is to deal with and the behavior the student is to develop. Since Tyler's work, other bases of the curriculum have been suggested. In the Eight-State report for education in the 1980's, Parker and McGuire suggest that classification of human activities, basic processes required to achieve high quality performance, and basic commitments and values of the American public be considered as additional sources from which the curriculum draw objectives (131).

In 1966, Goodlad, with Maurice Richter, Jr., significantly extended the Tyler rationale for studying and developing the field of curriculum in his small but powerful monograph (72), The Development of a Conceptual System for Dealing with Curriculum and Instruction. In addition to his identification of the three levels of decision-making within the curriculum-building process--the societal level with school boards as a representative group, the institutional level with the school as the focal point, and the instructional level with the classroom of students and teachers as the focal point--he identifies the data sources to be used. According to Goodlad, the curriculum can only provide learning opportunities; each child can experience the curriculum only through his own individuality.

Other tools have become available to curriculum workers which help to extend these two (Tyler and Goodlad) important theoretical bases of curriculum theory. Of increasing importance has been use of the three taxonomies (Bloom, Krathwohl, Simpson) which suggest the range of objectives with which the school could, and some educators say should, be concerned (15, 94, 155). These taxonomies outline a definition of the types of behaviors for three domains of human behavior--cognitive, affective, and psychomotor--which could be utilized in developing the objectives of the curriculum at the institutional and instructional levels.

With this kind of theoretical underpinning, we can reasonably well expect the curricula of schools to be the products of rational, logical, guided decision-making. As curricula are examined, however, large gaps in utilizing the Tyler, Goodlad, and the taxonomous approach can be identified. Contemporary curricula appear to be too often a product of the "cut and paste" approach of what has worked for the teacher in the past, a blind selection of an assortment of curriculum projects of national fame and heavy reliance upon the latest popular edition of the state-adopted basic text (70). The curriculum, however, need not be such a hodge-podge of assorted products. There are some movements now occurring in the field of education in general and some trends in the field of curriculum in particular which can help in designing and implementing far more rational, comprehensive curricula for schools of 1980.

Movements in Education Affecting Curriculum

Goodlad identifies four general movements within education today (58, 59).

These movements are influencing the curriculum of today to some degree and will undoubtedly influence the curriculum of tomorrow. They are, in fact, clearly related to the curriculum trends which are being predicted for the next decade. These movements are the discipline-centered approach to curriculum, the concern for the total curriculum being offered to the child, the humanistic movement in education, and the impact of educational technology upon the curriculum.

The discipline-centered curriculum of today had its beginnings during the 1950's and received great impetus from the launching of Sputnik when education came under very close scrutiny by the American public. Projects were developed, at first, through grants of federal money and had the cooperation of scholars in the various disciplines, of psychologists specializing in learning theory, and of teachers implementing the curricula in their classrooms. The attempt in most of the curriculum projects which quickly gained national repute was to analyze a distinct discipline according to its structure--the key concepts and processes which are basic to the discipline. Emphasis was on depth of understanding in the content area. Astronomy, biology, physics, chemistry, mathematics and many other disciplines were analyzed for their basic concept and process structure. The definition of a discipline as interpreted by different projects was not the same.* Most of the curriculum makes use of the disciplines as a data source, developed multi-media learning materials, and concerned themselves with the greater involvement of the student in learning.

This discipline-centered approach to curriculum is in evidence in today's school. The curriculum of the innovative and experimental John Adams High School is largely disciplines-based with a focus upon not a single discipline but upon a multidisciplinary approach (137). In another field, for example, Joyce (188) has outlined an excellent description of a social science curriculum--based on the disciplines--which has been implemented to some extent.

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*See, for example, descriptions of CHEM and CBA in The Changing School Curriculum (14). Each used chemistry as the basis for the curriculum, but each project defined the structure of chemistry differently.

The content quality of the national curriculum projects is generally high, no doubt due in large part to the involvement of noted scholars from each of the disciplines. In addition to this high quality, the results of this discipline-centered curriculum movement have significantly increased the range of options available in curriculum for schools of today and of the future. The discipline-centered curriculum has not only increased the number of options available in the curriculum in addition to the use of a basic text, but it has also increased the range of subject matter areas available to students. Content areas such as astronomy, interpersonal relations, sociology and anthropology--not normally included in the curriculum--are now available to students.

A second approach to the curriculum identified by Goodlad (58, 73) and others (131) focuses on a concern for a balanced curriculum. Goodlad called for two types of balances needed, a balance between the student and his learning materials, and a balance among the subjects included in the curriculum (58). The emphasis in this approach is on breadth in subject matter. The disciplines-centered movement produced an array of potential subject areas to be a part of the curriculum and a variety of processes which students could be expected to develop. The concern of the "total curriculum" movement is to create a meaningful curriculum out of all the potential choices now available.

A third major movement in education today which could have considerable impact upon the curriculum is the drive to humanize the school. This is becoming an increasingly popular theme in educational literature (8, 30, 50, 71, 80, 120, 140). The development of the person is the dominant concern of this approach to education, and it would use the student as the major source for the curriculum. This is a rather new force in education, although the bases for this movement have long been available in the psychological foundation of education.

As this latter movement gains impetus, it could have a profound effect upon the curriculum. This curriculum has no prescribed body of content or subject areas, but is built through the interests and needs of each student. The teacher is seen as a resource to help each student achieve his own goals. There is great concern for what students learn from the emotional climate of the school and the kind of interaction which occurs among all participants in the process of schooling. Curricula based on the humanistic concern are already being implemented in some respects in the schools of today. The John Adams High School in Portland, Oregon, has given much consideration to how the emotional climate of the school affects the development of the student (137). An experimental humanistic curriculum was implemented during the summer of 1971 at the University Elementary School, UCLA. The authors of *Toward a Mankind Curriculum* (71) have given much consideration to the climate or geist of the school in which the students and teachers function along with the development of high quality, positive interpersonal relationships. *Summerhill* no doubt provides one of the most well-known interpretations of this renewed interest in a child-centered curriculum (122). The curricula of free schools which are being established in some places (143) and the street academies as developed by the Urban League (121) are, perhaps, extreme examples of the implementation of the concerns of this movement. The curricula of these schools appear to be virtually anything the students express an interest in pursuing. Content is viewed as only a means by which the student unfolds his potential and develops his expressed interests and abilities. The student's most obvious needs appear to dictate the curricula. Perhaps it is significant that these latter two extreme interpretations of the humanistic movement exist beyond the boundaries of the public school system.

Another example of a type of curriculum being developed in relation to this movement, but within the formal school setting, is that modeled after the British Infant Schools (145, 82). This model has generated considerable interest on the part of American education. It also uses the student's current interests, needs and abilities as a basis of the curriculum, but at the same time emphasizes the development of the traditional communication skills. The "three R's" and other content are learned through each student's perceived need of them and not through preordained, timed sequencing of skills and content.

A fourth movement which affects curricula but which does not have as clear a relationship to the identifiable data sources of the curriculum as the other two is educational technology. It is certainly related to the needs and demands of our society, but it does not use society as a data source as Tyler has suggested (172). The effect upon the curriculum, nonetheless, can be forceful. Educational technology is in operation in some schools which have utilized the multi-media packets developed in some of the national curricular projects and in schools using an Individually Prescribed Instruction (IPI) approach. In a sense this movement lends support to each of the other three previously identified movements and the kind of curriculum would dictate. In a discipline-centered curriculum, teaching machines, including the computer, and other instructional devices could lead to many tightly sequenced learning programs based on content drawn from the disciplines. This appears to be the most popular and yet feared vision of the automated classroom where the teacher is reduced to being a second-rate machine keeper rather than an instructor. On the other hand, with all the resources which educational technology has made and will make available to the teacher, the chance to humanize the teacher and the curriculum can increase as Goodlad has suggested (59). At the same time Goodlad outlined the potential of educational technology, he also identified the problems involved in redefining the teaching role and expectations in such a curriculum. As computers take over more of the mundane jobs of scoring, recording and analyzing students' work for mistakes, the teacher has the opportunity to become more human and humane. The array of products made possible through educational technology also increases the opportunities of allowing each student to build his own curriculum according to his own interest, abilities, and aptitudes. Educational technology also offers opportunities to implement a total curriculum. The products of educational technology have the potential of making the whole array of subject fields from which the curriculum might be drawn accessible in various forms to all students.

Projected Curriculum Trends

Although new developments in curriculum have been made since the 1950's, it would be unwise to assume that various movements will automatically come to desirable fruition in the next ten years. Nevertheless, in light of these developments, we believe the following trends in school curriculum will become evident by 1980.

1. There will be increasing production and use of multi-media learning materials (30, 43, 47, 48, 59, 62, 143, 151, 152).

Although we believe it is doubtful that the basic text will be completely eliminated, in the social studies, for example, in the foreseeable future, teachers will probably increasingly look for supplementary materials to illustrate major themes, concepts and processes. These multi-media materials will include many forms: records, tapes, all kinds of printed materials, realia, films, aides, filmstrips, holographic images, computer programs, a wide array of people with varying talents, and a wider use of educational resources available within the broader community--museums, displays, cultural programs, businesses, industries, buildings, parks, etc.

There are specific aspects of the ways in which this trend is reflected in the literature. The Report of the California Statewide Social Sciences Study Committee suggests that ideally--and eventually--the single textbook would be replaced by a system of learning materials (143). These learning materials would include some units for the teachers, some units for the students, and some units for the whole class. Estvan calls for more availability of concrete learning materials and of primary sources (43). The use of primary sources will quite likely increase in all areas of the social studies.

2. The emphasis will continue to be on the structure of the disciplines (8, 9, 30, 47, 48). Fraser suggests that definitions of conceptual structures will change as new knowledge is added to the disciplines but that this approach to learning is an economical one and so will be continued (47). Processes within the

disciplines will gain as much increasing attention as the content of the curriculum already being done (8, 30, 47, 48). Again, in the social studies, a generalized mode of inquiry and the development of a broad conceptual scheme which allows students to participate more fully and effectively within our society has been predicted (9). The emphasis in history, for example, will be on the use of sources and not on courses of studies in the form of topics or eras as in the past (8, 30). Indeed, how the content is organized may change somewhat and the processes utilized in them may become more dominant. The number of social science disciplines represented in the curriculum will, as Fraser has suggested, increase (47, 48--see also Trend 5).

3. There will be a decreasing amount of time devoted to history and English in the curriculum (8, 30, 47, 48). The importance of history will decline and the entire range of the social science disciplines will become a part of the curriculum. Fraser points out that an economic emphasis in social studies will become apparent (47, 48).

4. There will be an increasing amount of interdisciplinary studies (8, 43, 44, 58, 9). The California State social studies framework (143) represents this trend in the integration of social studies content from various disciplines into rather general and traditional topics of study centering largely on man. Interdisciplinary studies occur through the introduction of areas of study which draw on several disciplines such as ecology and environmental studies. Minority studies such as Black studies and Chicano studies will be included. Area studies involving the use of several disciplines are expected to increase in popularity. The areas used for this kind of study will show the influence of the next trend, too, and will, as a

result, be drawn increasingly from the non-western world.

5. The perspective of the social studies will be enlarged (9, 30, 47, 48, 62, 70, 71). The focus will be away from a dominance of the western perspective to include non-western areas (47, 48, 62, 70, 71). This trend includes a broadened perspective that has been referred to as a mankind perspective (71), a world view (47, 48), and as a concern for international understanding (8, 30, 62). Area studies in the non-western areas of Africa, Asia and Latin-America will undoubtedly become increasingly popular in the content of the social studies. This trend also may give impetus to the preceding one in that these area studies will likely be interdisciplinary in nature.

The social studies perspective will be enlarged in a second way, also. The number of social science disciplines to be included will increase (47, 48, 131). Sociology, anthropology and psychology are already developing various projects by which these disciplines can gain entrance into the curriculum. The perspective will also be expanded to include the behavioral sciences (131).

6. The spiral organization of persistent topics and processes will continue to be the dominant pattern of content organization (43, 47, 62). Carefully selected topics and basic processes, probably from the structure of the social sciences or from problems, issues and trends in our society and world, will occur at increasing levels of complexity throughout various educational levels. The content will exemplify and develop these persistent topics and processes and not be treated as a body of facts or conclusions to be memorized.

Goodlad specifically mentions the method of induction as being a basic process in the social studies (62). Induction may become one of the persistent processes introduced in the early years of schooling and reappearing at all other levels in increasing stages of complexity as the child matures. If such an organizing element of the curriculum is used, it will undoubtedly function so as to narrow the array of content selected and thereby to force consideration of what are basic concepts, processes, and topics from the source of the curriculum being used--the disciplines or problems of our society and world.

7. There will be an increasing emphasis on the non-cognitive learnings (8, 30, 43, 120, 153). This has two possible avenues of implementation with implications for the social studies. One is that the kinds of concerns exemplified in the Taxonomy of Educational Objectives: Affective Domain (94) will become increasingly important. Values, interests, attitudes, appreciations and character development will become concerns of curriculum and instruction. Such emphasis will undoubtedly be reflected primarily in the social studies curriculum. Several authors are predicting that the role of values will become increasingly a curricular concern (43, 47, 71).

Another avenue of possible implementation of this trend may occur if the humanistic curriculum becomes dominant. With this approach one expects an increase in emphasis on the use of intuition, imagination, and synectics as processes to be built into the curriculum. If this does occur, it will have implications for the kinds of social studies products to be developed for the humanistic curriculum. However, this avenue is rarely mentioned in the current literature on curriculum.

8. Curriculum and instruction will become increasingly individualized for each student (8, 30, 43, 59, 120, 151). This trend will undoubtedly increase the need for autoinstructional materials based on the persistent topics, concepts and

processes as they are variously defined. It should also increase the growth in multi-media materials as more knowledge is gained about different styles of learning. The individualized curriculum should also be accompanied by diagnostic devices and suggestions to teachers to assist in tracking each student in his development. Continua in the form of levels of development will need to be defined for the skills, processes, and concepts included in the curriculum. This will be necessary in recording the progress on each student.

9. The student will become increasingly involved in planning and implementing his own curriculum (8, 30, 59). This development will undoubtedly call for more diagnostic and counseling activities and materials on the part of the teacher (8, 30). If this trend does grow, it should demand more materials directed for the student's use and consumption and not for the teacher's use. The teacher will be viewed more as a resource and not as the authority. This will in turn increase the demands for an array of learning materials.

10. There will be increasing involvement and flexibility of teachers in planning the curriculum at the local level (8, 30, 153). On the basis of this trend, Shedd, Newberg and De Lone predict that curricular packages will fail because teachers have not been involved in the development of them (153). The Eight-State Project (8, 30) suggests that as a result of this trend, for example, social studies curriculum guides will stress more the learning activities and resources than the topics. Goodlad predicts that the emphasis in the social studies curriculum will be upon the organizing center for learning in each classroom. If this trend does occur, it will significantly affect what is included in curricular guides and plans and the array of learning materials which will be needed.

11. There will be an increase in attempts to make the goals and curriculum pervasive throughout all dimensions of schooling (50, 71). The trend reflects the position that schools are a system with one part having an affect upon and being affected by all other parts. The organization of the school, the curriculum, the goals, instruction, resources, students, staff, evaluation and the geist of the school must all be operative in agreement with the school and its purposes. Along with the popular system approach to schooling goes the necessity of providing the freedom for and the acceptance of the responsibility by each teacher to implement in every classroom the goals and the curriculum to the benefit of each student.

12. Secondary schools will become less oriented toward the traditional academic fields and more toward other areas (8, 30). Concern for more practical courses will become more evident as the need for such topics as drug abuse, driver education, sex education, ecology, human interaction and uses of leisure time become increasingly critical in our society. More efforts to provide for these topics in the curriculum will occur.

13. Practical courses of study and enrollment in them will increase (8, 30). The concern for the topics to occur in the curriculum identified above will be expressed through existing courses rather than through the creation of new courses for the high schools. This will demand a new focus in terms of breadth and depth of content for the existing courses today in most high schools. Emphasis should increase on breadth in content and decrease on depth.

14. There will be a broadening of the educational program to include younger children through increasing provisions for early childhood education and to extend it to include older youth and adults for whom the schools are not now providing an

adequate program (8, 30, 50, 66, 151, 152). The concern for early childhood education is now a national one. The trend seems to be toward providing some type of publicly supported education for four-year-olds and perhaps even for three-year-olds. The curriculum for young children will become a topic of increasing dialogue and concern. At the other end of the age continuum, the need for continuing education for young adults and extending through the senior citizen age range is becoming more and more apparent. It should include appropriate curricula for a variety of groups of older youth and adults: drop-outs from formal schooling, those seeking new skills for vocational and recreational purposes, those seeking a new life style, those seeking an outlet for the expression of creative talents, those seeking cultural and aesthetic education, and those seeking to fill their later years with meaningful activities and experiences. This broadened view of the curriculum will also incorporate more fully into an operational design for learning the past activities for students usually referred to as "extra-curricular activities" or "paracurricular activities" (151). No longer will athletic events, interest groups, hobbies and cultural pursuits be considered as being outside the formal curriculum. They will be considered an integral part of a broad interpretation of curriculum and woven into the basic curriculum design.

Needs and Conclusions

As the theoretical bases for analyzing curriculum as a field of study, the four movements within education which will have impact on the curriculum, and the projected trends for the curriculum are examined in relation to each other, several gaps can be identified. These identified gaps lead us to a conclusion which we believe will assist in closing that gap.

The major dilemma which confronts curriculum makers is the overemphasis on using subject matter as the basic data source and the lack of emphasis displayed toward using the student as the data source. Therefore, we conclude that studies be undertaken to determine how data sources other than subject matter can be used effectively as bases for planning and implementing various curricula. Such studies might well have considerable impact on determining how effective a given curriculum might be with different groups of students. A curriculum based on students as the data source, for example, may have considerably more impact upon urban children than does a curriculum organized entirely around subject matter.

Little is known from research about the strengths and weaknesses of curricula using the various data sources. More is known about the subject matter curriculum than the other bases because the other bases have been so neglected in planning curricula. If they are utilized, research studies will be needed to study the impact of each upon various groups of learners. Some topics which might be considered are (1) how the needed communication skills by every student in a democracy can be effectively and efficiently developed if the curriculum is based upon the student or the society; (2) what and how basic attitudes are formed through various curriculum approaches; and (3) how the personal satisfaction achieved by students within the various approaches and how the understandings, values, and attributes needed by students in a democracy are developed in each of the various bases of curricula. Therefore, we further conclude that studies be carefully planned and conducted to study the results of implementing curricula which have different data sources as their bases. These should be comprehensive studies and not narrowly conceived ones with a limited focus. The previously mentioned anticipated outcomes of students should all be included as a part of these studies. It would be a grave mistake to evaluate the effectiveness of the different curricula on the narrow basis of academic achievement. A much wider array of student outcomes must be studied over a long period of time. Longitudinal studies are needed in order to determine the lasting impact of the strengths and weaknesses of each type of curricula.

As noted earlier, Tyler (172) indicates that all three data sources be utilized in building a curriculum, and Parker and McGuire (131) identify three other potential sources. In conjunction with our two preceding recommendations, it should be determined how best to weave these various approaches to curriculum into a coherent, effective design. Goodlad suggests organizing the curriculum around phases corresponding to stages of human development (58). In his sketch of how the phases concept might be organized, there seem to be reasonable places for utilizing the various curricula based on differing data sources. Tye has used Goodlad's phase concept and extended it into high school (170). He has also related it to the organization of the school and to different types of curricular modes. This appears to be a very promising way to organize the various options which are potentially available in curriculum design. Therefore, as a third conclusion, we urge that the theoretical and practical aspects of organizing the curriculum in phases be seriously and systematically investigated. This will require studies on both a theoretical, abstract level as well as studies of what happens when plans for curricula based on the phases of human development are actually implemented in schools of different types.

As the increased range of options continue to occur within curriculum, there must be ways to carefully evaluate them. The national curriculum projects represent a significant increase of choices available to teachers and students beyond the basic text which has been the foundation of the curriculum in the past. The trends toward multi-disciplinary approaches in subject matter, increased individualization of the curriculum and increased use of multi-media learning materials lead to the conclusion that options and resources available in the curriculum field will continue to increase. Some of these options are currently being put into practice, but they are not necessarily being selected on a rational basis for each situation. Some ways must be investigated whereby the various choices among curricula can be selected and evaluated on the basis of their potential impact for any given local school. This calls for the development and application of criteria for evaluating the curricula which are available now and will hopefully be increasingly available for schools in the 1980's. Some work has been initiated (115, 108, 111, 116, 132, 87, 171), but much study continues to be needed. Therefore, as a final conclusion about curriculum we suggest that a variety of plans to evaluate curricula and instructional materials be developed and studied so that wise selections can be made by the local schools in choosing among the alternatives in curriculum.

SECTION IV: INSTRUCTION AND INSTRUCTIONAL RESOURCES

In order to achieve the goals for schools in the 1980's, it is important to look at several instructional dimensions of the world of the school which surrounds the learner. This world includes both people and things. Our first discussion, therefore, will describe the social system of values and roles within which teachers and students in most public schools function. Our second section will describe some of the "things"--i.e., instructional resources--with which the student comes into contact.

The School's Social System of Values and Roles

The social system of the school includes expectations for student behaviors as well as for the formal and informal sanctions which regulate these behaviors. Most elementary and secondary schools do not pay conscious attention to their social system, although a great deal is now known about how values and roles affect and are affected by certain kinds of leadership behaviors, procedures for conflict resolution, and employment of group dynamics (130).

It might be assumed that expectations for student behavior would be derived from the school's expressed educational aims. However, school expectations for student behaviors often exist in response to the need to control the allocation of scarce resources such as time and space, or in response to societal values which sneak into the school, unnoticed.

The normative structure of the public school today is in many ways a reflection of traditional values which have already been, or are in the process of being, abandoned by society. For instance, the public schools seem to expect that children will work hard in the classroom, sacrificing present pleasures for future attainments. There is evidence, however, that our cultural values are coming more and more to prize sociability and present-time orientation rather than future achievement (55). Likewise, students in most public schools are expected to do individual, independent work rather than to collaborate with one another (note how often collaborative work is termed "cheating"). However, the occupational behaviors for which school is intended as preparation involve the seeking of help and information from others. It is in fact those individuals who are most adroit in locating others who have the needed information and in getting their help who are most successful (32).

Schools generally support the values of what Philip Slater calls "the old culture." Old culture values rest on the assumption that "the world does not contain the wherewithal to satisfy the needs of its human inhabitants" (156). The logical consequence of scarcity assumptions is structured inequality--and critics of the school have repeatedly pointed out that the system seems designed to make some children winners and others losers (77, 80). Slater points out that, since gratification is viewed as a scarce commodity, arousal is dangerous. "Any act or product which contains too much stimulus-value is considered to be in bad taste by old culture adherents" (156). Although Slater doesn't extend his point to the schools, the generally bland character of the classroom with fairly low levels of involvement and excitement on the part of both students and teachers (70), as well as resistance on the part of school people to accepting current fashions in dress, music, poetry, support the contention that school related adults bring into the school with them old culture values.

Nevertheless, there is a trend among newer experimental schools to consciously replace old culture values with new culture values--values based on the assumption that "important human needs are easily satisfied and that the resources for doing so are plentiful. Competition is unnecessary and the only danger to humans is human aggression" (156). Free schools, for instance, try to prolong those characteristics of childhood--spontaneity, playfulness, hedonism, use of the senses for pleasure rather than for utility--which they claim public schools replace with values of competition, status differentiation, ethnocentricity. The free schools are unrestrained in their praise of freedom, often without mention of concomitant responsibilities. One of these schools, the Community School of Santa Barbara, states in its brochure:

> The idea is that freedom is a supreme good; that people, including young people have a right to freedom and that people who are free will, in general, be more open, more human, more intelligent than people who are directed, manipulated, ordered about (165).

Many of the free schools in California--more than two hundred at last shifting count--have as their aim the "full flowering" of the individual with minimal external restraints. Most have no role differentiations, no requirements, no formal learning program. Learning flows from whatever happens to be in the environment. Perhaps more accepted than the "free schools" are the Montessori schools which stress the value of individual choice and self-determination. Their view of freedom includes the responsibility to use available resources--of time, space, equipment--efficiently and effectively.

In addition to the value structures permeating the schools, there are many possible roles which a teacher may fulfill in relation to his students. The normative structure within most public schools facilitates the performance of some roles and discourages others, although individual teachers within a school may function more autonomously. Joyce (88) lists seven possible roles a teacher might perform: cooperative group leader, organizer of others, conveyer of information, therapist, diagnostician of learning difficulties, resource specialist, guidance counselor, and subject matter specialist. Downey (31) collapses these categories into four: motivator, evaluator, consultant, coordinator. Whatever the number of available alternative roles, it is interesting that public school teachers are observed to exhibit only a few of the possible roles despite geographic or cultural differences among schools and in spite of the variety of instruments and perspectives from which such observations have been made.

Bellack discovered similar patterns of discourse in all the high school classrooms he observed. Three-fourths of all the words spoken in the classrooms were spoken by the teacher. He describes the usual teacher role:

> Teachers are responsible for structuring the lesson, soliciting responses from pupils and reacting to pupil responses. The pupil's primary task is to respond to the teacher's solicitations. Occasionally, pupils react to preceding statements, but these reactions are rarely evaluative. Pupils do not react evaluatively to teachers' statements and they evaluate other pupils' responses only when the teacher asks them to do so.
>
> Pupils infrequently solicit responses from the teacher about substantive meanings. Pupils seldom spontaneously structure the discourse. (11)

Bellack's findings have been corroborated by other classroom observers. B. Othanel Smith reports that 50% of the episodes of classroom discourse which he observed in English, social studies, science and math classrooms were concerned with verbal, didactic behaviors. (Four percent of the total number of episodes involved defining, 3% classifying, 13% explaining, 7% conditional inferring--that is, pointing out the consequences of a set of conditions--3% comparing or contrasting, 5% valuing, 15% designating--that is, identifying something by name, word, or symbol (157).

A study by Altman (3) records that observations made during third and fourth grade classes use of new science curricular materials had inner city teachers talking 34% of the time, their students 8%; while in advantaged schools, teachers talked 40% of the total time, students 13%. The author notes:

> Inner city and advantaged classes differ little in the affective behaviors of praise, criticism, admission or humor. In both socio-economic areas, there is no doubt that the teacher is the center of power who sets, administers and evaluates the rules of the classroom 'game'.

Informal observers say the same thing. Silberman (154) notes teacher dominance and student passivity: "in most classrooms . . . the teacher stands in front of the room, dispensing 'inert ideas' to his passive students as if they were so many empty vessels to be filled." Goodlad and Klein state that one of "the most monotonously recurring pieces of data was that the teachers asked the questions and the children responded. . . . It is fair to say that teacher to child interaction was the mode in all but 5% of the classes." (70) Travers found that teachers often had a personal need to evidence control over students and to exercise command. He found some teachers who spent more than 40% of all the time they talked in doing this (169).

There has been recent interest in defining the "organizer of others" role in terms of precisely engineered techniques. Principles of positive reinforcement and extinction, based on stimulus-response theory, are increasingly being used to modify the behavior of normal children in public school classes (103). In Montessori classrooms, the predominant roles of the teacher are arranger of the environment and facilitator of learning. The teacher provides direction by carefully preparing the environment to include that which aids learning and to exclude distractions and irrelevancies. The environment is thoroughly and meticulously arranged to provide structure not only to guide the child's performance on cognitive tasks, but to give him a large amount of freedom from direct teacher intervention. Teachers make available to children a variety of self-instructional materials from which to choose. They also provide lessons which are pre-planned--and which are brief, simple and objective:

> The teacher must not lose herself in vain words . . . and these carefully chosen words must be the most simple it is possible to find and must refer to the truth. . . . The lesson must be presented in such a way that the personality of the teacher shall disappear. There shall remain in evidence only the object to which she wishes to call the attention of the child (109).

Free schools, insofar as they are concerned with teacher roles, see teachers as facilitators of learning working on an individualized basis with students, almost always at the request of, or upon the initiative of, students themselves. A. S. Neill says:

> We have no new methods of teaching because we do not consider that teaching matters very much. Whether a school has or has not a special method for teaching long division is of no significance, for long division is of no importance except to those who want to learn it. And the child who wants to learn long division will learn it no matter how it is taught (122).

And another related movement--Individually Prescribed Instruction (IPI)--removes the didactic, telling and explaining role from the teacher to the materials which are sequential and individually paced. In classrooms using IPI, the teacher functions as a guide to the student as he moves through the material. The teacher's role is to motivate students, keep them involved, chart their progress, and select appropriate remedial materials.

There are two current trends affecting the role of the teacher in the classroom. The advocates of the one trend want to clearly articulate the most important and predominant role of the teacher, and then train the teacher in the specific skills needed for that role. If the predominant teacher role is seen as that of changing learner performance on cognitive tasks, teachers are encouraged to develop diagnostic and testing skills. If the predominant teacher role is that of behavior modifier, his training should be in those skills. In each of the eleven models funded by the Office of Education, as the basis for programs in teacher education, there is a different priority for teacher roles, and therefore for training.

The advocates of the second trend want to separate the various teaching roles and embody them in different people and materials. For instance, those who are associated with product development are removing many of the functions associated with the role of conveyer of information from the teacher to pre-planned and tested products. Teacher aides are taking over some of the clerical procedures involved in the evaluator role. Team teaching is a device for encouraging teachers to become expert in those roles they find most compatible.

There is a related trend in research on teacher effectiveness. It seems that the long search for the effective teacher, defined either in terms of roles or of personal characteristics and particular proficiencies, is coming to an end. The way to knowledge about teaching, or about institutional effectiveness, lies both in the analysis of the larger school system and in experimentation with smaller instructional variables. Some identified variables are practice, knowledge of results, feedback, sequencing, advance organizers, prompting and cuing. Investigation is taking the form of identifying the effects of these variables on described learners rather than on comparing the effectiveness of one with another. Effects are also beginning to be interpreted more broadly: immediate retention tests are being supplemented by delayed retention tests and by measures of vertical and horizontal transfer as well as by attempts to measure unanticipated outcomes. The results of such research are just beginning to be felt in more precisely defined skills which teachers can use in the classroom.

Peter Drucker says:

> Teaching is the only major occupation of man for which we have not yet developed tools that make an average person capable of competence and performance. . . . What we need are not "better teachers". Indeed we cannot hope to get "better teachers" in quantity. In no area of human endeavor have we ever been able to upgrade the human race. We get better results by giving the same people the right tools and by organizing their work properly. We need to "learn smarter". (33)

Student roles are set both by the individual teacher and by the larger normative structure of the school within which both teachers and students operate. Children in the public schools usually operate within fixed social groups not of their own choosing:

> When the child walks into the classroom the first day of school in the autumn, he may find with him friends, rivals, strangers, comprising an entirely accidental social milieu. And, in most cases, if the child is disturbed by these involuntary associations, he has no recourse. Under these conditions, the would-be learners' major pre-occupation in the classroom may center not on the learning task but on the predicament of getting along for the greater part of his waking hours with an accidentally selected group of disturbing associates with whom he is required to work towards a common goal chosen by someone else. (55)

Children in the public schools usually operate within a set of restrictions on their movements which, even if formulated in the interests of safety or crowd control, inform students of their roles--as passive participants in a process over which they have no control. Silence is required in classrooms where the presence of other people invites communication; immobility is expected where movement seems more natural.

Students within schools are encouraged to regard one another and their teachers primarily within their role relationship. The assignment-performance-evaluation sequence of the work provided by teachers limits childrens' assessment of their own worth and that of others to task accomplishment. The testing done in school reinforces this: individual differences are used as a means of determining who does well in the competition, and the result approximates the normal curve. Bloom (14) notes that this convinces teachers and students alike that only some are capable of learning what the schools have to teach, whereas, with adequate instructional techniques, almost all students should be able to achieve mastery. Students within a school are encouraged to categorize themselves and others-- "I'm a third grader," "He's in the dumb class"-- and they learn to think of themselves and others in terms of these categories.

There is a trend in the direction of regarding the student as a whole person, recognizing that his phychological, emotional, physical and interpersonal needs can not be separated from one another. Many of the current attempts to individualize instruction change the role of the student from passive receiver of learning where his primary behaviors are listening and responding to questions to active initiator and sustainer of his own learning. At the same time, some of these innovations restructure the relationships among students.

The free schools use the family as the model for student (and teacher) roles and encourage informal interest-related relationships among students unhampered by age or ability groupings. Students select their own learning activities in relation to their own goals at the pace of their own choosing. Adult guidance is provided upon request, or is sometimes offered by the teacher.

Schools operating in the Summerhill tradition do not require student attendance at classes. Students for a large part of the day pursue unsupervised activities. Town meetings, where each member of the school has a single vote, decides all matters including basic policies such as curriculum and teaching (122).

Schools following the British Infant School model believe that the system of school classification is a very significant influence on the development of each child. They do not leave it to chance. They have adopted a system of "vertical" or family grouping in which individuals of different ages (four and a half to seven and a half) are placed in equal proportion within a single class, staying through the infant school stage in the care of one teacher.

> A vertically grouped class is not an amalgam of three distinct age groups, e.g., the fives, the sixes, and the sevens, each with its separate and well-defined plans. It does, of course, contain roughly equal proportions of each age, and there is certainly some group work in the vertical organization as well as individual and class work; but such groups as there are form and reform on the basis of individual interests and needs, not on the basis of age. Groups are formed in relation to essential teaching points. (146)

The principals upon which vertical grouping are based do not sound unfamiliar. They are part of the rhetoric of American schools, even though they are not incorporated into organizational practice. They are 1) the need for continuity and coherence in the educational life of the child; 2) the need to respect the child as an individual in his own right; 3) the acceptance of the child as the agent in his own learning; 4) and the need to provide for the fullest development of a balanced personality.

Also, there are some schools in America which are experimenting with other forms of class organization as a way of facilitating changed student roles. Philadelphia's Parkway Program, where the resources of the community are used as the classroom and there is no building at all to house the school, also uses a family grouping of sixteen students, a teacher and intern as the basic form of organization (129). The Ruby Thomas Elementary School in Las Vegas, Nevada, encourages interaction among students by placing each child on a team with seven other students ranging in age from 9 to 12. The "team captain" is responsible for the welfare of his teammates. This method of grouping is seen for its value in helping children learn interpersonal skills.

There is a trend, then, in the direction of changing student roles from passive to active, from observer to participant, from listener to doer. Sometimes this means permitting the student to work at his own rate. Sometimes this means allowing the student to take responsibility for selecting his own learning materials for prescribed goals, sometimes for selecting his own goals. It may mean freeing the student to interact with other students on intellectual and social tasks.

This trend, however, has not yet become widespread. In a recent study of 7,237 high schools, innovations relating to changed student and teacher roles had been tried less frequently than innovations relating to changes in curricular material. For instance, more than 71% of the schools reported using language labs, more than 29% reported use of programmed instructional materials, 16% reported using some form of instructional TV. Less than 5% reported trying forms of non-grading, differentiated staffing or daily demand scheduling (22). The impact of such changes in terms of the instructional events with which the student comes into contact is probably slight. Joyce observes

> Any school that wishes to employ self-instruction, cooperative inquiry or any other means that is not a normal part of the educational system as it now goes on can expect that the changes of instructional strategy will have to be accompanied by changes in the social system of the school. If the social system of the school is not made to cooperate--be a part of--the educational strategy, all other aspects of educational method will probably have little effect on the student. (88)

Instruction in schools of the 1980's may perhaps appear different from instruction in the schools of the 1970's. Whether it will be better in terms of its effects on students depends on two considerations. The first consideration is the purpose of the changes. Changes relating to instruction may be made in response to political pressures, or in response to budgetary or management or other requirements. If changes are made for these reasons, rather than primarily in response to the diagnosed needs of children vis-a-vis explicitly agreed upon outlines of education, the effects on children of the "view" of instruction may be somewhat different from, but not an improvement of, the "old." The second consideration is the pervasiveness of the changes. If the values and role relationships within the school remain static while changes in scheduling, reorganization or materials are introduced, the effect of the so-called "new" instruction on children may not be different at all. Students are very quick to spot and react to the gap between what schools proclaim they are doing and what they are actually doing. Instructional actions speak louder than instructional words.

The Non-Human Educational Resources

Instructional resources also refer to all the non-human, learning connected resources with which a student comes into contact during a school day. This includes textbooks, workbooks, educational films, educational TV, programmed instructional materials and the libraries or learning centers which house them. More recently, it has come to include computer assisted instruction.

Textbooks are obviously the backbone of present day instruction. Without texts, teachers would hardly know what to do. There are over 14,000 textbooks in print with approximately 55,000 additional items such as films, filmstrips, transparencies to accompany them (93). These textbooks are generally selected for classroom use by committees of teachers and experts in consultation with sales representatives. Mr. Kenneth Komoski, President of the Educational Products Information Exchange Institute testified that of 19 school districts surveyed, none made learning effectiveness a purchasing specification.

> We must estimate that 99% of the materials school children now use have not been put through even the initial phases of the learner verification and revision cycle. Under 1% of the approximately 14,000 textbooks has been systematically shaped through the learner tryout and revision process. (93)

Even though it is overoptimistic to call it a trend, there is growing awareness of the need to test textbooks with the learners for whom they are intended, and to make this information available to prospective purchasers.

Another mini-trend, not yet a groundswell, is the effort to develop multi-ethnic textbooks. The tendency so far, according to Robert Follet, Jr. of Follett Publishing Company of Chicago, is to black-face Dick and Jane (123), but there is evidence in both reading materials (i.e., The Bank Street Readers) and in history texts that "black" demands for more adequate representation are beginning to be recognized. Meyer Weinberg of Chicago claims, "We need a Tennessee Valley Authority type of agency for textbooks where Federal grants would be awarded to non-profit groups to hire outstanding black historians and writers to come up with adequate books." (123) Detroit has been the first major school system to adopt multi-ethnic books after complaints from black parents. California has exerted an influence in this direction: a state law requires "equal treatment for all races" in textbooks (123).

Instructional Products

Instructional products are becoming more common in schools. More than 29% of the high schools in the Cawalti study reported using programmed materials of some sort. Within the last decade, programmed instruction has moved from a restricted definition based on observable characteristics such as small, carefully sequenced steps producing errorless student responses to an expanded definition requiring only replicability of treatment and dependability of effects. Programs have become products.

Products developed for the schools come in two versions--homegrown and mass produced. Homegrown products are developed by local school districts, or even by individual schools or teachers. Sometimes they get traded through exchanges. LAP's (Learning Activity Packages) and UNIPAC's are some which have widespread use, even though quality is quite uneven. Homegrown products usually contain the following characteristics: 1) emphasis on a single concept; 2) behaviorally stated objectives: 3) multiple activities and methodologies; 4) diversified learning resources;

5) evaluation instruments, and 6) breadth and depth suggestions. They are usually developed by teachers participating in workshops, and are used to help individualize instruction. Because of the enormous investment of time and energy involved in producing these products, little or no testing is done with them, and they are not always dependable in producing pre-specified behavioral changes.

A more sophisticated approach to training product developers is being taken by Eva Baker at UCLA who is developing a workshop to help developers identify and use high probability learning principles such as statements of objectives, use of advanced organizers, prompts, appropriate practice, and knowledge of results in the development of products.

Instructional packages are being mass produced and field tested in connection with Project PLAN (Project for Learning in Accordance with Need), by IPI, and by many of the regional laboratories. Project PLAN is producing TLU's--Teaching-Learning Units. Based on a search of the field in language arts, social studies, math and science, approximately 1,500 specific behavioral objectives were identified or specified, each requiring about two or three hours to achieve. Approximately five objectives are grouped together into a module intended for two weeks worth of instructional time. A Teacher-Learning Unit is a one page guide containing one specific objective and suggested materials to be used to achieve that objective. More than one TLU is included for each objective to give the student alternative routes for achieving competencies. It is possible to evaluate the effectiveness of various materials and methods by analyzing the test scores of students using different TLU's to achieve the same objective (45).

Many of the eleven Regional Laboratories are currently producing instructional products both for direct instructional purposes and as the vehicle for investigating instructional variables and strategies. For instance, the Central Midwestern Regional Educational Laboratory (CEMREL) in St. Louis is producing and testing more than thirty packages of materials related to aesthetic education as well as additional materials related to language and thinking skills (23).

The Southwest Regional Laboratory has been devoted to two major product development efforts directed at students--a communication skills program starting with kindergarten intended to produce proficiency in written and spoken communication, and a problem-solving skills program, also at the kindergarten level (161).

In spite of the great hopes raised by programmed instruction and instructional products for revolutionizing education, the impact of the movement has been greater for research than for instruction. Susan Markle writes: "Serious weaknesses in the design of materials, economics of design and use and an almost insurmountable gulf between the philosophy of programmers and most school systems" accounts for the disappointment (100).

The same disappointment has been evidenced for other areas of technology which, a short time ago, seemed to hold such promise for individualizing instruction and changing schools into places of learning. This is the vision of George Leonard in Education and Ecstacy when he describes visiting day, 2001 A.D., in Kennedy School, Santa Fe, New Mexico:

> A total of some 800 children between three and ten are enrolled in Kennedy, but on a typical morning only about 600 are on the school grounds. Most of the educational environments are in operation from eight in the morning until six in the afternoon. Children can come when and if they please . . . While the children are on the school grounds, they are absolutely free to do anything they wish that does not hurt someone else. They are free learners. . . . In the Basics Dome, there are forty learning consoles

> at each of which is seated a child between the ages of three and seven, facing outward toward the learning displays. Each child sits at a keyboard, essentially less complex than that of an old fashioned typewriter, but fitted with a number of shifts so that almost every symbol known to human culture can be produced. . . .

This vision is almost as far away as the day Leonard wrote it. Why? Oettinger (125) answers in terms of the social system of the school: "It combines the rigidity of a military service and the fragmentation of small business without the centralized authority that can make the military move or the initiative and flexibility of response of the small entrepreneur." He also notes the many unresolved problems which technology raises--costs, difficulty of use, lack of reliability, or flexibility. Kurland sees that the new technology is exerting a "push" on the educational enterprise, but denies that there is an overwhelming needs "pull": everyone sees that they have a need for an automatic washer, but not everyone sees that there is a need for educational television in schools (195).

Instructional Television

Widespread interest in using TV as a medium of instruction in the schools began in the 1950's. In 1955, St. Louis conducted experiments comparing TV instructed classes with regular classes with the conclusion that the technique is not a panacea, but a tool whose effectiveness resides mainly in the resourcefulness of the teacher. Further experimentation was done in the Washington County school system in Hagerstown, Maryland, in an attempt to clarify the role of teachers both in preparing and in using instructional TV programs. In 1957, the Ford Foundation funded a nationwide experiment with 40,000 students in more than 200 elementary and secondary schools to provide data on the kind and amount of services needed to support instructional television and to solve some of the problems involved in scheduling classes, developing teacher talent, keeping children involved. They defined some of the problems; but solutions were still being sought when, in 1964, the Midwest Project for Airborne Television Instruction revealed that teachers objected to the loss of control of classroom objectives, format and activities.

Overall instructional television facilities and programs have increased to the point where four out of five people live in areas where they exist. Only Alaska, Wyoming and Montana do not have stations.

There are four ways in which instructional television can be used. Single room TV--or videotaping--can be used to magnify instructional demonstrations in laboratory courses, and in playing back and evaluating student skills in such activities as group discussions, role playing, debating, drama. Most often, however, ITV is thought to mean studio-originated programs produced either within the school system itself or purchased or rented by the school system. This kind of programming can be used in three ways: direct teaching, defined as the situation where the TV teacher takes over a major part of the instruction; supplementary teaching where programs are used for motivational or support purposes for regular teacher directed instruction; and enrichment teaching where occasional programs are used in the classroom to provide experiences not directly related to the course of instruction.

Direct teaching by TV, with its promise of carefully developed and tested programming which could instruct large groups of students at the same time, has been most disappointing. Part of the difficulty lies in the cost and time of putting TV programming through trial and revision cycles. Part of the difficulty lies in finding the correct mix of teachers, subject matter experts, and TV professionals to produce successful programming. However, most of the difficulty lies in the reluctance of classroom teachers--and of school systems--to let curriculum and instructional planning out of their control and to change their roles to that of support for a TV teacher. Consequently, ITV has been used mostly as a supplement or enrichment for the normal course of study, and has made little impact on either the social or the technological systems of the school.

Although there are still media-media studies being conducted which attempt to determine the superiority of one medium over another in teaching children, there is general awareness that these studies have demonstrated their inadequacy to produce generalizable findings useful in other instructional situations (134). Studies concerned with ITV are now concentrating on defining characteristics of the medium--for instance discovering what TV conventions have to be taught to children before they can understand the relationship between long shots and close-ups--or on discovering generalizable effects such as the conditions under which visual and aural presentations together are superior to either one alone.

Computers

The first computer was put on the commercial market in 1950, and yet the predicted revolution in education that was heralded is not upon us. Although much work is being done to translate the vision of possible computer uses into practice, the machine has yet to make substantial impact on American educational practices.

There are three main uses for computers in education: as teaching machines, as management tools and as research tools. As teaching machines, the computer, up to now, has functioned largely as an expensive extension of the programmer. Drill and practice is the most usual mode of instruction handled by the computer and is being experimented with in math and reading programs by Patrick Suppes of Stanford, Harold Mitzel of Penn State, Don Bitzer of the University of Illinois, and Duncan Hansen of Florida State University (110). In New York City, 200 terminals operate in 16 schools at a cost of $1 million annually. Six thousand students get an average of ten minutes instruction daily in one subject (29). Excessive costs still limit the more widespread use of the computer. A study by Booz, Allen and Hamilton (110) estimates that with commercially available equipment, the cost of drill and practice is in excess of $2 per hour per student. Simulations and games as well as the use of computers in problem solving, and the creation of musical and artistic compositions are still in the experimental stage. If the criteria for using computers which were developed by Project PLATO (Programmed Logic for Automatic Teaching Operation) were to be widely applied, the day of the computer taking over instruction is still far away. The criteria are:

> The computer should be used only when it is the best method of presentation.
> The computer should be used to simulate results in models built by students.
> The computer should be used to present materials in a variety of teaching strategies.
> The computer cost should be comparable to the cost of teaching at the elementary level.

Computer managed instruction, where the computer takes over administrative, budgeting, or scheduling tasks, or where the computer tracks student progress through a pre-specified sequence of tasks, is more common. New England

Education Data Systems (NEEDS), based in Waltham, Mass., provides computer services to help member schools with filing, scheduling, accounting, attendance, test scoring and analysis. The Southwest Regional Laboratory is developing a computer managed system in connection with their communication skills program. Individually Prescribed Instruction (IPI) and Project for Learning in Accordance with Need (PLAN) also make extensive use of computers to collect data, monitor student progress, diagnose student difficulties, and prescribe remedies. The research use of computers for information retrieval is increasing.

Despite the potential for instructional technology, Richard deLone, in sketching a context for its use, warns that if computers simply make the old ways more efficient, if instructional technology in general "is simply used to buttress that anti-intellectual, anti-learning, anti-growth system and its assumptions, then education is on the verge of its greatest boondoggle." (39) Even so the promise of educational technology remains great. There is general agreement on what has to happen to transform it into reality, although there is disagreement on the specific mechanisms (125, 107, 100). Promising ideas must be supported over the long term with risk-taking encouraged and failure cushioned. Cooperative planning among schools, universities, industries and government must take place with schools acting as demonstration centers, universities undertaking basic investigation, industry developing the hardware and government supplying the money. And, perhaps most importantly, educators must be retrained to handle the management, staffing and production of materials used by the new technology.

Alternative Futures for Educational Technology

We live in a non-ideological age which does not have a vision which predicts the future. Our thinking about the future is usually technical--"what can be done?" rather than normative--"what do we want to do?" Some writers suggest a systematic approach to deciding what we want to do. Livingston (97) recommends that we classify all possible goals and then make priority judgments about the right combinations without tying our judgments to the existing school structure. His classifications are: 1) the extent of opportunities for participation, 2) curricular relevance, 3) structural flexibility, 4) effective participation, and 5) efficient participation. He compares the priority profiles of five different kinds of presently existing school images: traditional, stimulated laissez-faire, intended adaptivity, philosopher king and integrated emphasis. They differ from one another considerably. For instance, the stimulated laissez-faire image rates high on structural flexibility, but very low on efficient or effective participation. There are a large number of possible priority combinations with possibilities for many more school "images" than are now in existence.

Marshall McLuhan's ideas about schooling for the future are less systematically derived. He claims that technology, particularly television, creates its own environment.

> Man has suddenly, in the electronic age, left the age of the continuum, . . . we have gone 'through the looking glass' a la Lewis Carroll into the world where time and space are not connected. They are not continuous at all, and that is like our unconscious. Our unconscious contains everything but there are no connections. Consciousness is a little insignificant area in which we strive to keep things in place and visually connected . . . with TV you go inside yourself. The TV generation of children are [sic.] very depth oriented, completely unrelated to any other goals. TV kids have no goals in education or living. They

> play the total field. . . . Our kids have no goals because they understand the world they are living in and you cannot have goals in an electronic total-field world. You cannot have fixed objectives. What do you put in their place? Roles! Involvement - participation in depth - in processes. Our youngsters understand this without fail. They understand that the new kind of world in which they live demands absolute participation in processes (102).

McLuhan suggests that schools of the future will be devoted to investigation. "We life in the age of the detective, the investigator, because in an information environment there is nothing else to do except investigate."(102) In this age of information overload, information is not power, but information processing is.

Public education has been bureaucratically resistant to change--but there are some alternative schools existing here and there outside the system--and there are some alternative schools growing up even within the school system. These schools--and there should be many more of them--provide scenarios for the future. They give Americans concrete examples of alternative futures.

The Pennsylvania Advancement School is organized as a non-profit corporation and is housed in a converted old factory that bears no resemblance to a conventional school building. Started in September 1967 for 7th and 8th grade "underachieving boys," it has had more than 769 students, 237 teachers and 2,560 visitors. The staff and the students learn together, and together they have developed 15 different, exportable, curriculum projects. Boys are organized into family units and meet on schedule for one and a half hours a day. The function of the school is "to turn people on to investigating." The boundaries between staff and student, visitor and participants, professors are blurred. Visitors are asked to participate. Teachers from other schools exchange with Advancement School teachers to share new ideas. Teachers and professors have joint appointments at the Advancement

School and at the University. Workshops encourage cadres of teachers within other schools to take over parts of their own schools (133).

The John Adams High School, noted in our discussion of curriculum, opened in September 1969 as a clinical school affiliated with the Portland School System, run by secondary school teachers trained at Harvard Graduate School of Education. Their goal is to provide a relevant curriculum with structural flexibility. The core program consists of a non-graded General Education program organized around the solution of problems and taught by interdisciplinary teams and a Basic Skills program concentrating on skills development through self-instructional materials. The Mobile School program for some students uses the community as a resource and the school bus as the classroom. A variety of short mini-courses are also offered, some taught by students. The John Adams High School is consciously trying to make the social system and the technological system consistent with the expressed aims of the school: to allow the student maximum responsibility and control over his own educational life (86).

Harlem Prep is one of fourteen street academies, established by the Urban League and funded by major corporations, functioning in New York City. The Street Academies are based on the recognition that "dropping out of school is a legitimate and often necessary response by human beings to a situation they find intolerably cold, oppressive and frustrating . . . The educational program is generally aimed at liberating human potentiation and encouraging each individual student to strengthen his own character. Loud talk, uproarious laughter, smoking cigarettes, leaving rooms without passes or paddles and passionate disagreement are expected activities."(86)

The Street Academy program uses the community as resource--with students going out to observe as in the Philadelphia Parkway Program--and with a resource pool of artists, scientists and professionals who come to speak and to give demonstrations. In addition, there is a list of basic study areas which include the usual communication skills but also areas such as: a) specific techniques of survival in the game of conventional school education, and b) prejudices of all kinds, superstitions and pernicious institutions and ideas that have been the sources of misunderstanding, division and murder among mankind . . ." Emphasis is on learning how to learn. Guiding principles include the oneness of mankind; abolition of prejudices, justice, service, love and respect, freedom to investigate truth, to speak and believe (86). Although unconventional learning methods are used, standard testing procedures are also used to demonstrate the effectiveness of the Academy in educating competent learners. The Street Academies, then, aim to extend participation to those who would ordinarily be high school dropouts, to be relevant as well as to have structural flexibility and effective and efficient participation.

Summary

Harold Shane (149) suggests that there are five phases in future educational planning. Summarized and rephrased, they are:

1. Arriving at a trend census. This consists of the educated guesses of knowledgable people in the field about anticipated possibilities.

2. Making a social consequence projection of these trends. This means listing the possible events in terms of their importance to education.

3. Making a probability-difficulty analysis to provide a basis for deploying time, money and energy.

4. Writing scenarios to explore possible consequences of changes.

5. Milestone appraisal and reporting of progress on earlier decisions.

Using Shane's five phases, we can summarize the main points of this paper.

1. Anticipated possibilities

   a. Schools will adapt to changing societal values. They will become increasingly concerned with processes as well as outcomes with schooling as part of life rather than preparation for life. They will increasingly emphasize skills in information processing rather than skills in information acquisition, storage and retrieval.

   b. Teacher roles will become more varied. Teachers will become more skilled in using psychological principles effectively and efficiently for both affective and cognitive development. Teachers will become willing to vary their roles in relation to students and/or teachers will become proficient in specialized roles and join with other teachers to provide the flexibility needed to adequately teach students.

   c. The student role will change from passive learner to active participant in the learning process. He will take increasing responsibility for the selection of goals, learning materials and experiences, pacing of his own learning. At the same time, students may exercise their freedom not to learn within school settings, and will spend their time in other ways.

   d. The technological resources available to the school will increase at differential rates. Computers will help to manage instruction sooner that they will effectively assist instruction. Instructional television will supplement and enrich other instructional materials. Films will increasingly provide more dependable instruction as they are developed in accordance with a trial and revision cycle with learners.

   e. Schools will become more efficient and effective in promoting learner achievement of basic skills as they adopt new instructional means.

2. Social consequences of these trends

   a. Schools will better serve the needs of society by producing human beings who are capable of responding to rapid change, who have learned how to process information, to come up with new solutions, who can cope with an emerging environment which this generation can only dimly perceive or understand.

b. Schools will make more of an impact on students both quantitatively and qualitatively. That is, as schools become more relevant to their needs, students will stay in school rather than drop out physically or psychologically.

c. Schools, as they become more effective, more efficient and more flexible in promoting learning, may become less useful in performing their custodial function. The boundaries between school and real-life may become blurred, with students working as part of their education, learning as part of their work experience. The relationship between school and the job market may change drastically.

d. Just as the boundaries between school and work may dissolve, so may the boundaries separating the universities and the schools, and industry and the schools become less clear. Universities, schools and industries have to work together to advance the research, development and implementation of instructional technology

3. Probability-difficulty analysis

To adequately analyze the probability or difficulty of change requires much detailed technical information, and great competency. However, some general difficulties can be noted.

a. People change slowly--some not at all. Adapting to new values and roles is difficult for adults in general, exceedingly difficult for teachers who want to pass on to children what they themselves know. Margaret Mead claims that for adults to really be able to communicate with children today, they have to learn a "second language."

b. Small, piecemeal efforts to change the technological system of the school do not often result in small but beneficial changes. They usually result in no changes at all. They are a waste of time and energy.

c. Planned change, consistent and rationally undertaken, is a long-term, expensive enterprise with many risks and many failures. Often, the pressure of events or of politics does not permit this. Unless the climate for change is present--that is, unless it becomes necessary, acceptable and desirable to change rather than stay the same--the institution of the school will remain the same.

4. Writing scenarios

Some alternatives now exist. There are free schools, street academies, schools using programmed instruction. More are needed. In addition, the computer used as a research tool could explore the implications of differing goal priorities, of differing combinations of instructional roles and resources.

5. Milestone appraisal and reporting occur after decisions have been made to determine if adjustments are needed.

Suggestions

Somehow we need more educational utopias. We should find ways of encouraging people to think about and write about the future--the oddballs of the world as well as the rationalists--the McLuhanites, the artists, the kids, as well as the educators and the planners. We should get some cross-fertilization from other countries and cultures. We need lots of brainstorming about the desirable as distinct from the possible.

Then we need to support research into the possibles we need to know more about, the linkages between phenomena--between instructional events and learning, between structured environments and personality, between short term and long range outcomes. We need to find ways to replicate treatments so that we can learn about the dependability of effects.

We need to try things out. We need real life demonstrations--with tables, chairs, kids, activities, teachers, tests. We need to develop schools which are planned for consistency between their aims, objectives, teacher roles, student roles, school organization, instructional materials. We need to develop measures appropriate to these aims and objectives so that we can begin building a repertoire of contingent generalizations.

SECTION V: EVALUATION

Evaluation can be broadly defined as a general process by which relevant information is collected and disseminated for purposes of making decisions (1, 163, 166). Currently, education is concerned with at least four broad categories which serve as the objects of evaluation: students, teachers, instructional programs and instruction, and schools. (The institution of schooling itself also is being evaluated by critics; however, their inquiry is a different type, using tools derived from history, sociology and philosophy.)

In order to conduct an evaluation, certain questions must be asked: (a) what is "relevant information"? (b) how can it best be collected? (c) how can it best be disseminated? (d) how can it best be interpreted and used by decision makers? Although comprehensive theories of evaluation are beginning to emerge, the rationale, methodology, design, instruments, etc., which evaluators develop are usually suitable only for a particular object of evaluation, they are sometimes generalizable to a category of objects.

Students

The kinds of decisions which are to be made--that is, the purpose for which the evaluation is being conducted--should obviously influence the kind of information collected.

Allocation and selection decisions should take into account information gathered by norm-referenced measures. School personnel must make many decisions whereby students are assigned to groups, grades, programs. Elementary school teachers must determine whether small children are ready to start kindergarten, what classes they should be assigned to, what special programs they should participate in. High schools must make decisions about which students should be assigned to special tracks, and what students take what electives. Colleges must determine who is accepted and who rejected. These decisions require either the selection of limited numbers of students for specific programs or the allocation of all students across a range of possible alternatives. The decisions should take into account information which compares students with one another along a relevant dimension.

Two sets of data are ordinarily used for these types of evaluations: teacher assigned grades and standardized tests. Both of these sets are norm-referenced in that they depend upon either explicit or implicit comparisons of an individual with others who are presumed similar to him. Teacher grades depend on the individual teacher's standards and judgment. The norm group is all the other children the teacher may have had previous experience with.

Standardized Tests

Standardized tests of both intelligence and achievement are supposed to increase the fairness with which students are compared with one another. The presumed standardization of judgments and the clear description of the norm group eliminate the idiosyncrasies of personal judgments.

Standardized tests obtain a sample of the individual's responses at a particular point in time on some broadly defined dimension and compare them to those of some larger population. The tests are constructed so that student scores have great variability. Some students do very well, others very poorly. The writers of standardized tests try to construct items which will discriminate among students. To make items harder they may introduce extraneous considerations tangential to the dimension supposedly being tested. One of the arguments of many black and chicano groups is just that--that standardized tests do not measure what they say they do, but rather have cultural and linguistic biases as well as other irrelevancies built into them.

An analysis of standardized tests by the Center for the Study of Evaluation (91) concludes that many standardized tests do not measure what their title indicates. This example is cited from a reading readiness test:

> Look at the pictures in row 4 (Note: pictures are a mouse or rat, a rabbit and a bird). Listen carefully: "This is a story about three living things you might find around a farm. One day they were talking about how they liked to live. One said, 'I like fresh air. When I was very little, I lived in a nest in an apple tree. I lived outside all the time.' Another one said, 'I like to live outside, too. I lived in a nest when I was very little, but it was on the ground.' The other one said, 'I don't like it outside very well, I like to live in barns and houses.' Find which one spoke first and fill in the oval under it.
>
> Klein writes:
>
> An analysis of this item reveals that it requires the pupil to store 10 separate units of information plus sequence and inferences drawn from the information. At this point, one wonders whether the item belongs on a reading readiness test or a reasoning test or on a listening memory test. (91)

In addition, this example assumes that children understand the convention of talking animals. Children who have had experience with farm stories and pictures are likely to find this question a lot easier than other children who may be equally ready to read. Standardized tests usually assume that all children have had equal opportunity to develop the characteristics being measured and that differences in test scores reflect differences in individuals. When this assumption is violated--as in the case of minority children--fair comparisons of individuals for purposes of allocation cannot be made.

Just as the content validity of standardized tests is coming under scrutiny, so too are the conditions under which the tests are given. They appear to be less standardized than was once thought. Format and instructions may cause confusion and result in lower scores for non-test wise children.

Predictive validity is a characteristic possessed by good standardized tests. If standardized tests correlate well with some other measure of ability or achievement, taken some time in the future, it is assumed that these tests measure innate qualities which are not affected by the school environment. It can be argued, however, that what the tests do is confirm the consistency of school experiences on children. Achieving students are affected one way, failing students another way by schooling. The tests predict this phenomenon rather than consistent abilities or aptitudes within students.

Standardized test scores have enormous effect on the choices presented to individual students. They have a more general impact as well. Benjamin Bloom notes that:

> . . . to develop tests that are widely used for selection and prediction purposes is to determine which human qualities are prized and which are neglected; to develop instruments that are frequently used to classify and describe human beings is to alter human relations and to affect a person's view of himself.
>
> It is no great exaggeration to compare the power of testing on human affairs with the power of atomic energy. Both are capable of great possible benefit to all of mankind, and both contain equally great potential for destroying mankind. (33)

It is sometimes argued that standardized tests themselves are value free, and it is the use to which they are put which certifies values. This may be true; but the fact that there exist sophisticated instruments to measure some abilities and not others seems to certify those which are measurable as more desirable.

Standardized tests are widely used in schools throughout the United States.

> Standardized ability tests, including intelligence and achievement measures, have been almost universally adopted by educational systems in this country. It has been estimated that each of the fifty million or more school children in the United States takes, on the average, three standardized tests each year. Testing practices differ widely from school district to school district and from grade to grade within school systems. This means that some children are exposed to more than three standardized tests in a given year while some take fewer or none. Nevertheless, it is a rare child indeed whose abilities are not formally tested on several occasions by the time he finishes secondary school. (73)

Standardized tests, although in need of improvement, are appropriate evaluation instruments when the information sought is for purposes of assigning students within schools or selecting those who go on to more schooling. However, when student evaluation is sought for the purpose of making decisions about instruction, standardized test scores are inappropriate.

Criterion Referenced Measures

Instructional decisions should be based on information gathered by criterion referenced measures. Criterion referenced measures are used to determine an individual's relation to an explicitly stated standard. These measures do not compare individuals with one another but with some defined criterion. They provide information about an individual's competency on a specific dimension rather than on his standing in relation to other members of a group (116). Obviously, criterion referenced measures can also be used to make comparisons between individuals or groups.

but this is not their primary purpose.

Most instructional decisions about children should be made based on criterion-referenced rather than norm-referenced measures. The diagnosis of an individual child's deficiencies in reading, for instance, should be made based on a series of tests made up to measure objectives presumed to be prerequisite to the reading task. Decisions about remedial instruction should be based on the same kind of evaluation. Individualizing instruction requires decisions about the pacing, mode, and sequencing which are most suitable for a particular child's needs. The information upon which these decisions should be based come from criterion-referenced measures which tell precisely where the child is in relation to what is to be learned. Standardized tests are instruments too crude for this purpose.

In the massive new volume, Handbook on Formative and Summative Evaluation of Student Learning (33), Bloom points out that the use of norm-referenced testing for instructional purposes can produce children who are failures:

> . . . we effectively convince students that they can only do C and D work by our grading systems and even by our systems of quizzes and progress testing. . . . There is nothing sacred about the normal curve. It is the distribution most appropriate to chance and random activity. Education is a purposeful activity and we seek to have students learn what we have to teach. If we are effective in our instruction, the distribution of achievement should be very different from the normal curve. In fact, we may even insist that our educational efforts have been unsuccessful to the extent that the distribution of achievement approximates the normal distribution. (33)

Criterion-referenced testing still has many technical difficulties to overcome. Such tests are specific to objectives and therefore many different tests must be constructed. The problems of the length of such tests, the measurement of item difficulty, and statistical techniques for estimating validity and reliability are still being explored. Construction of a pool of homogeneous items will become easier when some of the parameters of task, content and behaviors are spelled out more fully. The use of item forms is being investigated by Wells Hively at Minnesota, Jason Millman at Cornell, and the Instructional Objectives Exchange in Los Angeles.

If advances in diagnosing, prescribing and evaluating individualized instruction are to occur, criterion-referenced testing should replace norm-referenced testing and will become the indispensable instrument of evaluation of student learning.

Dissemination of information from student evaluations is becoming more widespread. Students are apparently being told of their standardized test scores in high school as an aid to helping them make academic and vocational decisions (74). Project Talent regards scores on tests as an important source of information which students themselves are taught to use in directing their own education.

Up until very recently, however, the only information which students and parents received from the school was norm-referenced data. Report cards are teacher assigned grades based on comparative standards which differ from teacher to teacher, and often depend on the chemistry of the personal relationship between teacher and student. There is a growing feeling that report cards should report the degree of mastery the child has achieved in relation to specific kinds of learning.

Teachers

A Gallup Poll in 1970 found that 67% of the people contacted believed that teachers and school administrators should be held more accountable for their students' progress. However, the problem of evaluating teachers to distinguish the "good" ones from the others has not been satisfactorily resolved. The questions of what is relevant information about teaching as well as the measures of assessing it are still open. Attempts to describe or predict the effective teacher have dominated the field of research on teaching for the past forty years (52). This research has taken the following form. Identify or select a criterion of effectiveness and use it as the dependent variable. Measure the criterion. Measure the correlates of the criterion. Determine the correlation between the correlates and the criterion. Researchers have used a variety of criteria such as in-service ratings, peer-ratings, pupil-gain scores, pupil ratings, scores from tests to measure teaching effectiveness, practice teaching grades, or combinations of these (7).

The accountability movement has given new emphasis to pupil outcomes as an important criterion for evaluating teachers, although attempts to formulate the kinds of pupil outcomes which were most desired go back a long way. The Committee on the Criteria of Teacher Effectiveness (142) formulated an "ultimacy paradigm" for pupil outcomes descending from the ultimate to the proximate. Teachers on the job, for instance, might be rated in terms of pupil achievement and success either in life, subsequent schooling, or in his current education.

Discouragement with describing or predicting the successful teacher has led some investigators to research on classroom processes--studies of socio-emotional climate, pupil behavior and statements, teacher behavior and statements and their interactions. The development of a number of classroom observation schemes as well as rater categories has been one result of this line of inquiry (e.g., Bellack, Flanders, Jackson, Meux and Smith). The observers hope "to model the master teacher." Others (e.g., Glaser, Skinner, Bucharow) take an "active" approach and are attempting "to master the teaching model" by making explicit the manipulable elements and relationships needed to optimize learning (52).

This latter approach seems to have promise. It differs from the many studies which inconclusively compare teaching methods with one another. In spite of hundreds of studies comparing lecture, discussion, project-related, and inquiry approaches, there seems to be "hardly any direct evidence to favor one method over another." (174) Wallen and Travers as well as others (Ausubel, Bruner, Crabtree, Stolurow) note that comparisons of teaching methods really compare two unknown conditions containing a mixed bag of variables. They suggest that a systematic design of a teaching method involves two steps: 1) specifying a set of identifiable conditions related to learning, the importance of these conditions having been established by empirical research, and 2) the design of teaching behavior to ensure that these conditions are implemented in the classroom.

The completion of such a set of identifiable conditions is some way off, although a start has been made and incorporated into micro-teaching units developed by the Far West Regional Laboratory. Popham at UCLA is developing short teacher performance tests which assess the teacher's ability to bring about changes in pupil learning on pre-specified objectives. The same tests can be used for comparing teachers on their instructional ability to change student performance. It may be that this use of small scale teacher performance tests can also help differentiate teacher roles. Teachers who can change pupil performance more effectively in small group situations will not be required to handle large groups. Improved teacher evaluation procedures, relating directly to the instructional outcomes which they desire for their students, would clearly help to improve both teaching and learning.

Instructional Programs and Instruction

The Elementary and Secondary Education Act of 1965 gave new impetus to instruction with requirements in Title I and Title III for annual evaluation reports. In 1969, however, Malcolm Provus noted glumly that

> useful evaluation theory and practice are no better established in public schools today than they were then . . . In most public school systems, evaluation consists of preemptive applications of quasi-experimental designs and abortive efforts to improve programs which were poorly designed and installed and remain poorly administered. (138)

Whether or not good evaluation practice is evident in public schools, evaluation theory is alive and well in the pages of numerous journals and reviews. Ian Westbury in an article entitled "Curriculum Evaluation" in the Review of Educational Research wryly observed that he was on well-ploughed ground since curriculum evaluation appeared as a chapter topic in three of the five issues of the 1969 Reviews of Educational Research (178). There is no space here to deal with the innumerable problems which plague those who try to develop methods for collecting and disseminating evaluation information about instructional programs. We will only briefly sketch some of the models which have been developed to help evaluators decide what constitutes relevant information.

Relevant information for evaluating instructional programs

Stufflebeam (166) has identified four kinds of decision situations in education: planning, programming, implementing and recycling. Given these four types of decisions to be served, there are four corresponding types of evaluation. Context evaluation would be used when a program is first being planned. Input evaluation would be used next for specific programming of activities. Process evaluation would be used continuously during the implementation of the project and product evaluation would be used after a complete cycle of the project. Stufflebeam spells out in considerable detail the kinds of information required for each type of evaluation.

The Center for the Study of Evaluation (CSE) relates relevant information to five decision areas of concern: problem selection, program selection, program operationalization, program improvement and program certification (1). Corresponding to these decision areas are five different kinds of evaluation: needs assessment, program planning, implementation evaluation, progress evaluation, outcome evaluation. The Stufflebeam and CSE models, although using slightly different terminology with slightly different emphases, are proceeding in similar directions. In both models, desirable goals are developed for the entire project, and then each stage of the evaluation is checked out against these goals.

A somewhat different approach is advocated by Provus (138) who views evaluation as a comparison of performance against a standard. His Discrepancy Model has five stages each with its own set of standards. He gathers information about program design, program operation, program interim products, program terminal products and program cost, and compares the information with the standard set for each stage. The decision to terminate the project may be made at any evaluation stage.

A simpler distinction divides program evaluation into only two kinds--formative and summative, the distinction being based on the purpose of the evaluation. *Formative* evaluation, as defined by Scriven (148), is to discover deficiencies and successes in the intermediate version of a new curriculum, while summative evaluation is to discover the effects of an already completed program. (The terms have been used in the title of a large volume by Bloom, Hastings and Madaus, *Handbook on Formative and Summative Evaluation of Student Learning* (17) and redefined to apply to the evaluation of students. Bloom defines formative evaluation as diagnostic--determining the degree of mastery by the learner of a specific task. Summative evaluation, he says, is directed toward a more general assessment of the degree to which the larger outcomes of a course of study have been attained.

The original use of the terms, as coined by Scriven, has been fruitful in distinguishing information and techniques important during the period when a product can be changed from the information and techniques important for summative evaluation. A handbook such as *Colligere* (160) usefully describes the conduct of field testing for formative evaluation.

Many of the differences of opinion among evaluation theorists focus on the inclusiveness of the evaluation process and the breadth of the role of evaluator. Some evaluators want to include judgment data from users (303); some want to use multiple criterion measures (330); some want to be alert to long range and unintended consequences of programs. Some want to include cost benefit analyses and other comparative data (148). Evaluation theory and practice should be developing big muscles soon. Evaluation is here to stay. The proliferation of educational alternatives, as well as the demand for educational accountability, will keep the evaluators in business for a long time to come. The ingenuity with which they develop their field will have lasting effects on the development of curriculum and instruction.

One approach to the overall evaluation of instruction is National Assessment, which has supplied practical answers to questions about the relevancy, collection and dissemination of information. The following description is condensed from National

Assessment, Summary of Report 1, 1970 (35). A plan for National Assessment was begun in 1964 by the Exploratory Committee on Assessing the Progress of Education in order to collect information about the knowledge and skills of 9, 13, 17 year olds and young adults in ten subject areas taught in schools. Selected subject areas are to be assessed each year. During 1969, the first assessments for the four age levels in citizenship, science and writing were conducted with a sampling of 100,000 persons selected to represent the entire country.

For each subject area, objectives were developed and reviewed by panels of citizens, subject matter specialists, and educators to assure that they were acceptable and current goals of education. A variety of assessment procedures were devised for the objectives. A representative sampling of schools and students was made, and selected items for each subject area were given to selected students. National assessment does not provide information about individuals nor about schools. It is a nation-wide data gathering process to indicate what groups of young people at different age levels know and do not know. The reports which are issued to the public disclose about 40% of the specific questions or tasks. The remaining 60% will be used in the future to measure change. The exercises were designed to cover a range of easy to difficult for a single objective. When the same exercise is administered at more than one age level, differences of knowledge, skills and understanding can be compared.

> National Assessment is the first nationwide effort to provide concerned citizens and educators with dependable information about how we in the United States are attaining agreed-upon educational objectives. As areas are assessed again, educational progress—or its absence—will be revealed and educational problems which require continuing attention may be identified. It is hoped that National Assessment reports will provide valuable indices of American educational results which will be useful in making educational decisions. (35)

Schools

The pressures for educational accountability--even though there are as many definitions as there are speakers--are beginning to be felt at the school level. In addition, school principals and teachers are beginning to be aware that there are educational choices which should be made on a rational and planned basis. Unthinking resistance to innovation is impossible today; equally unacceptable, however, is unthinking adopting of innovation without thoughtful planning. Change then turns into chaos, not progress. The Elementary School Appraisal Study of |I|D|E|A| has developed a rationale to help schools institutionalize some of the procedures needed for an on-going school evaluation and improvement program.

The |I|D|E|A| staff has developed a thirty-hour Problem Solving School program. The aim of this thirty-hour staff development program is to help school staffs gain the knowledge and skills which will help them to work together to create self-renewing schools. If schools themselves do not undertake the task of self-evaluation, and define for themselves the extent to which they are meeting their educational objectives, outsiders will do it for them. If evaluation is to serve as the basis for school improvement rather than school criticism, it must be shared by those directly involved in the school.

The Problem Solving School program is based on the assumption that in order for a school to engage in self-evaluation, the staff must develop two kinds of problem solving skills--skills which foster collaboration in solving problems and skills which promote systematic efforts in attacking problems.

Collaborative skills are those skills involved in working effectively together in groups. It is sometimes difficult for teachers who have been trained to work as independent professionals to realize that professional collaboration with colleagues in solving school wide problems can be satisfying and productive. However, collaboration in solving school problems requires a high level of interpersonal skill which develops slowly and requires practice.

Systematic problem-solving skills are based on a careful diagnosis of the problem and an analysis of alternatives. This thoughtful rational approach not only helps to solve the problem but also improves the ability of the problem solver to cope effectively and efficiently with future problems.

[illegible] has attempted to develop and evaluate a series of products which school staffs can use independently of consultant help. These products are designed for two levels of school use. At the staff level, there is a series of meetings at which teachers participate in exercises designed to give them practice in both collaborative and systematic problem solving techniques. These meetings are structured through guidelines included in a teacher's handbook, through forms which are to be filled out during meetings to encourage observation of on-going processes, and through taped directions. For the classroom level, a series of small group meetings of three or four teachers who have similar classroom concerns are structured around nine programmed booklets and related classroom practice. The program is coordinated and administered by a development team of a few members of the school staff who have been elected by regular staff vote.

Although the project has developed materials for a one year thirty hour staff development program, there will be suggestions and guidelines for institutionalizing some features of the program in subsequent years--the use of small teacher groups to work together on classroom problems, the use of specific techniques at staff meetings whose purpose is to solve school-wide problems.

Summary

Evaluation is expanding its scope and includes much more than traditional measurement techniques. Educational evaluation is fruitfully borrowing from systems analysis and from operations research as well as from classical experimental methodology to develop a unique approach to the problems of education. Evaluation is presently conceived of as a process intimately connected with the formulation and development of new materials as well as a process which occurs after a product is already in existence.

The increasingly precise ways in which evaluators are conceptualizing their involvement with students, teachers, instruction, and schools may become contagious: educators and others involved with schools (citizenry), and perhaps even students) may learn how to approach more wisely the complex problems of making and implementing educational decisions. Evaluators with wide angle lenses will have an important part to play in the shaping of the educational future.

SECTION VI. SCHOOL ORGANIZATION AND STAFFING

One of the major areas of innovation during the reform movement of the 1960's and 60's was school organization (70). As a response to the research regarding individualizing learning rates and patterns of learning, new forms of school organization were developed to satisfy such needs for individualized instruction. The structural rigidity of the traditional graded, self-contained classroom school in which one teacher was supposed to meet the needs of all the learners was not providing the flexibility to meet the new demands of educational change (10). So, to meet the new demands of education, due attention must be given to the organization of the school.

The organization of the schools may be defined as the process of classifying pupils' progress vertically during the course of schooling from entrance to graduation and horizontally of organizing the learners within a school building at any given time (8).

Unit Organization

The pattern of graded unit organization of public schools in the mid-twentieth century was an elementary school consisting of a graded structure from kindergarten through grade six, a junior high school of grades seven through nine, and a senior high school of grades ten through twelve (8). Though [illegible] organizationally [illegible] one way or the other, the public school began with the child at age five and moved him by grades through these three units until graduation at about age 18. [illegible] schools [illegible] to another traditional [illegible] high school plan or were patterned from current public school practice.

Prior to kindergarten, some children attended nursery school and four year old kindergarten, but this educational unit existed for the most part in the realm of private education and enrollment was voluntary. In only a few instances, such as at the laboratory schools connected with University of California, Los Angeles, the University of Wisconsin, Milwaukee, and the University of Chicago, were the nursery and four year old kindergartens attached to the subsequent school units. The funding of the Headstart Program by the Office of Education kept the early childhood program separate from the regular public school enterprise and delineated only attendance by "disadvantaged" children ([illegible]). The subsequent funding of a follow-up study to investigate the progress of Headstart children in elementary school is the first nationwide connection of early childhood education to continuous progress into the public elementary school ([illegible]).

The city of Pittsburgh is an example of an emerging trend to connect pre-school education to public school systems ([illegible]). Fifty eight preschools, including Headstart centers, are operated under the jurisdiction of the public schools. In [illegible], after eight years, these preschools operated on a ten month period with a morning session for three year olds and an afternoon session for four year olds. As with Project Headstart, these preschools exist to provide the "disadvantaged" child with experiences so he could be successful in the traditional school. These pre-schools, as with Project Headstart, were not available to the total population of the area.

Recent research into early childhood development indicates children as young as two years benefit by a schooling experience outside the home ([illegible]). A report by the Committee for Economic Development urges the adoption of nursery schools by public and private sectors of the economy (26). (The trend is toward the beginning for formal schooling at an earlier age.) However, current research on Project Headstart indicates that assumptions on which early childhood programs are based should relate to the individual development and abilities of children of that age and not as an earlier preparation for the traditional formal school program (28).

Newer patterns of unit organization from the current traditional pattern of K-6; 3; 3 have been advanced. One of the most popular is the middle or junior high school. Judith Murphy defines the middle school as an intermediate school that takes "account of the special needs and capabilities of children in the years between childhood and adolescence" (128). With the growing adherence to the philosophy that schools should provide for the individual needs of the learners, educators began to question the purpose of the existing junior high structure. With such a variety of individual differences existing in academic achievement by that level, Margaret Mead stated that the existing junior high schools are boring for the capable students and wasteful of the time of both bright and duller students (104). The need for the junior high school to be a preparatory institution for high school negates the needs of the pre-adolescent youth. Pre-adolescents need a secure environment to find out who they are (76). The complex structure of the existing junior high with huge enrollment, frequent class changes, teachers meeting over a hundred students a day creates more problems for youngsters at that age rather than solves them. J. H. Hull indicates that the make-up of the junior high also does not serve the emotional and social needs of youth (76).

In 1950, Bay City, Michigan was the first system to formally adopt middle schools. In 1966, Pittsburgh, Pennsylvania, began a ten year conversion to middle schools. The City of New York is planning implementation of the middle school in 1972-73 (76).

Data to support a trend toward middle schools can be cited by the increase in the number of middle schools from 1966 to 1968. William A. Cuff contacted 50 state departments and from 36 replies identified 490 middle schools during the year 1965 through 1966. Of these, 55% were organized on K-5; 6-8; 9-12 grades; 30% were organized K-4; 5-8; 9-12, and the remainder were arrangements of additional years being tacked on to the elementary or high school unit (112). At the National Association of Secondary School Principals in 1968, Emmet Williams claimed an existence of over 1,000 middle schools and a decrease in the number of junior high schools (112).

Conversion to the middle school represents a second phase of a reorganization of secondary schooling and an opportunity to implement other aspects of the continuous progress curriculum and school reorganization (112). Henry F. Olds advocates the utilization of nongrading to provide flexibility for individual differences and growth and development of a sense of inquiry as the central pursuit of the middle school, delineating this school's function to serve the unique needs of the adolescent. Fox Lane Middle School opened in Mount Kisco, New York, provides an example of a school structure designed for the implementation of team teaching and multi-sized group learning rooms.

The growth of the middle school indicates a trend in unit organization to serve the student rather than to impart certain bits and pieces of content or subject matter. As discussed later, the community school is another example of unit organization that serves student needs but is more encompassing and serves the needs of the surrounding community. Systems Development Corporation has proposed an all-inclusive or highly centralized New School model which encompasses preschool and K-12 in one unit (105). This model envisions a community school with child care, community recreation, adult education and other recommended services. Implementation of this model would include decision-making by both school staff and the community being served by the new school.[1] This plan envisions a large student attendance, approximately an assignment of 2,600 students, so a diversity of materials and staff can be available in one location. In spring of 1969, Pasadena Unified School System developed a master plan for the construction of new schools and rennovation of all existing structures for the implementation of team teaching and technological advances in instruction.[2] In Pasadena's plan, a community resource center and computer data bank would be in conjunction with one school but serving a broader area of town or several community schools. This is a combination of centralized community resources serving wide areas and school units operating and serving on a decentralized basis.

Implementation of SDC's New School plan has fine possibilities for construction of a new facility in a high density area. However, with large tracts of land difficult and costly to obtain, it is probable that the development of community schools will occur on a less costly basis through rennovation and additions of existing school structures. A suggested model might include a rennovated elementary school serving as a lower school for learners aged 2-10. Learners could be grouped in clusters or pods and share the same central facilities as library, day care center, media center, and cafeteria. Rennovated junior high schools could serve as middle schools, and existing high schools and junior colleges could be altered to serve the needs of learners aged 14-20 and on.

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[1] Culver City, California, had plans to adopt this model for construction of a new school, but funding problems cancelled those plans.

[2] One of the writers of this report, Diana Buell Hiatt, served as a teacher consultant in development of the Pasadena Plan, which has not been implemented because of lack of funding.

In the SDC plan, after graduation from the public high school, students have the option to continue education on a voluntary and usually self-supportive basis. Such options include vocational schooling, a junior or two-year college for liberal arts training, and college or university work. The State of California is one of the forerunners in providing advanced education to its inhabitants by providing free tuition to able students entering junior colleges, state colleges, or state universities. Adult education programs for either vocation advancement or personal enrichment were offered by either a junior college district or a state college serving the area. (Both advanced and adult education need further research to indicate how the growing needs and trends for continuous education through life can best be met.)

Vertical Organization

Since the Quincy Grammar School opened in 1848, the notion of gradedness has been accepted by the private and public schools in our country (69). Children progress vertically from year to year in lock-step fashion. Certain skills and knowledge content were delegated to each grade and a grade-level expectancy existed (5). Children were compared with their peers and graded according to their ability to acquire the intended learnings. Promotion was based on minimum acquisition of the intended learnings and non-promotion meant a repetition of the learnings.

As early as the 1920's, educators questioned the structural rigidity of the graded school organization and such plans as the Winnetka and Dalton Plans were developed. The Winnetka Plan emphasized individual progress through sequential curriculum units. An individual learner was assigned a homeroom on the basis of age and maturity on the philosophical assumption that children need a group identity of peers similar to them. Within this homeroom unit, the learner progressed at his own rate through the curriculum units (152). The Winnetka Plan provided for individualized instruction by grades. In the Dalton Plan, age groups were mingled. Children were assigned to teachers on the basis of achievement. The Dalton Plan could be classed as a nongraded, multi-age, departmentalized program.

A third attempt to alter the traditional one teacher one grade approach was Stoddard's Dual Progress Plan (152). In this organizational plan, which was usually at the upper elementary level or fourth, fifth, and sixth grades, a form of semi-departmentalization existed. One half of the school day, pupils worked under a "homeroom teacher" who was a reading, social studies, and counselling specialist. In the other half of the day, pupils moved by achievement groups (homogeneous groups by content area) to what Stoddard termed as "cultural electives, " versus the basics of schooling of reading and social studies. These electives included such areas as art, music, mathematics. This plan offered a basic core curriculum, which provided for the development of a group identity, and opportunities to work with teacher specialists in homogeneous ability groupings. The school systems of Ossining and Long Beach, New York, are examples of implementation of Stoddard's Plan. Except for this Dual Progress Plan, none of these three approaches received much widespread support and implementation (152).

As more educators and teachers began to accept the fact that children learn at varying rates and children do not progress evenly in all academic areas (e.g., math and reading), other variations than lock-step gradedness began to occur, and most schools began to provide for some individualization of instruction (5). One variation to the rigid gradedness is flexibility in use of materials within a classroom. Although children of the same general age are in one class, the teacher can provide materials for differing academic levels. A popular example is grouping in reading, which tends to divide the slow, moderate and fast-paced readers into three separate reading groups usually following the same text materials, but at different rates (70). A second variation is the automatic promotion of all pupils regardless of academic achievement. A third variation is the multi-grade classroom in which two or three grades are placed together. In these classes, pupils can more easily be assigned work at their appropriate grade level materials, since a wider range of two or three grade level materials are present. However, a real alternative is abandoning the graded structure and developing the concept of nongradedness which is proposed by John I. Goodlad and Robert H. Anderson. They state: "Nongrading, in intent, sweeps away the graded superstructure, graded content, graded textbooks, graded standards, and graded nomenclature to which we have long been accustomed. It facilitates the substitution of pupil progress uninhibited by grade barriers" (79). Hillson and Bonger prefer the term "continuous progress" to describe such a vertical organization, rather than the negative connotations given in the term "non" grading. Though there is a growing trend in America toward nongrading, among the 73,000 schools in our country, it is found in only a small minority of cases (79). A study made by Goodlad and Anderson in 1957-58 indicates nongraded existed in about 50 communities across the United States (69). Most nongrading exists at the primary level (46).

One of the original school systems to attempt nongrading was Milwaukee, Wisconsin, in 1942. It utilized a series of semester steps from 1-8 in the primary grades (46). The pupils were grouped primarily by reading progress and moved upward as reading skill advanced. A rapidly advancing child could enter fourth grade after four or five semesters and a slower maturing child might take seven or eight semesters to reach that level. However, with an attempt at nongrading in operation in only a portion of the school organization, children labeled as primary step seven or eight were readily pinpointed as slow learners. A bottleneck was created at semester six as those who needed additional time to mature, those labeled P7 and P8, were placed with children progressing at the mean rate and labeled P6. Thus, Milwaukee exemplifies problems that can occur when only a portion of the vertical school organization is "nongraded" and labels are placed on children so that their rate of progress is readily identified. In effect, Milwaukee fell short of implementing what today is considered to be non-grading.

Hillson and Bonger (79) indicated the philosophical assumptions of continuous progress education should include:

1. The pupil is the baseline on which accomplishment is measured.

2. A pupil is advanced on his ability to perform in a given area. There is no promotion or retention.

3. Readiness is based on individual diagnosis.

4. There are no ceilings or floors on a child's learnings; no limitations to the materials a child may use.

5. A pupil is not grouped by age, but by a number of related factors such as learning rate, learning style, teacher personality.

6. No material is given a grade designation, but material is designed in an ordered sequence or stages based on research in that area or skill.

7. Grouping patterns must be flexible to meet the needs of varying learner growth (69).

A working example of the above organization is the University Elementary School at the University of California, Los Angeles, under the direction of John I. Goodlad (61). All the pupils and teachers in the school are assigned to one of nine nongraded clusters. The number in each cluster may range from twenty-five to seventy-five or even a hundred. Each child is individually assigned to a cluster based on his own individual needs and not strictly on his age. Various ages are placed in each cluster through such criteria as working peer relationships, best place for individual growth, and cognitive and emotional needs. Teams of teachers, the principal, and other professional staff members work together in developing each cluster arrangement. The make-up of the clusters varies from year to year, but children are usually assigned at least one full year to a cluster to establish group identity and some remain for as long as three years in one cluster. Instructional groups can vary from day to day, or whatever time sequence is demanded, depending on the learning progress of the student. In such a flexible arrangement, questions about "skipping" or "retaining" a child never arise. The child is always the baseline for individual diagnosis and prescription.

Though nongradedness has been more prevalent at the primary level, there are signs that the trend is moving upward. Henry Olds, in a speech to a Curriculum

Conference of Administrators in 1966, advocated a continuation of the nongradedness concept into the middle school (128). Melbourne High School in Florida, under the direction of B. Frank Brown, is an example at the high school level. Students are assigned to classes in each content area on the basis of scores on nationally standardized achievement tests (20). Each student works at his own achievement level. Independent studies are available to students with special or highly developed skills in certain areas. The success of this organizational pattern is readily seen in comparing the high school drop-out rate from the national average of 33% to 4% and an increase in college enrollments from 40% to 70%.

Though the comparison studies of pupil achievement from graded classrooms to nongraded are complex and difficult to perform, Joseph W. Halliwell has pulled together several recent studies in mathematics and reading that indicate strongly that pupils in nongraded classrooms have greater achievement than those in graded classrooms (46). These studies indicated that superior students made greater academic growth, that less able students showed less emotional frustration and had a better attitude toward the subject matter, and that the teacher preferred the nongraded approach.

Reporting to parents and recording progress in a nongraded school takes on an entirely different dimension. Reporting to parents is not done on the traditional peer comparison basis in which the more able students continuously receive the higher grades and the slower, less able students continuously receive the lower grades (69). This reporting system focuses on the individual as the baseline. Many nongraded schools utilize individual parent conferences, often with the student in attendance, during which teachers relate the child's progress from where he started to where he has progressed. School records indicate such facts as acquisition of skills in a sequential order and provide written comments on individual assets and limitations, as observed during instructional periods.

Horizontal Organization

Horizontal organization of the school is the grouping of learners and teachers at any given time within the school. The popular pattern of school organization is the self-contained classroom in which pupils are homogeneously assigned according to age. Each classroom is similar in size, in number of learners, and is presided over by one teacher.

Except for a few private elementary schools, one teacher teaches all subjects and the time periods of the day are determined by individual teachers usually guided by district or state policy at the elementary level. At the junior and senior high school level, subject matter is broken into content areas or departments, such as science, social studies, mathematics. Subject matter is rigidly assigned in a sequential order on the basis of tradition, not research, and classes of students progress by grade up through the sequence in each department. The school day is divided into equal time allotments, usually seven or eight periods, and bells ring to indicate when classes are to move on to the next class. The assumption here is that each body of knowledge should be treated with equal time and students need a routine for daily ordering of learning (99).

Horizontal organization has a wide array of alternative patterns which can be paired with either gradedness or nongradedness in a vertical organization in a myriad of combinations. Choice of the right combination of alternatives depends on the needs of each particular school (61). Alternatives of horizontal organization include:

1. Arrangement of pupils in equal-sized, self-contained classrooms.

2. Arrangement of pupils in multiple-sized classes, depending on the nature and function of the instruction (152). Pupils may work in large groups for such instruction as films, lectures, performance by an outside source as a drama group. Pupils may work in small laboratory session groups. Pupils may work in discussion groups or individually at learning carrells or tutorially with a teacher or another student.

3. Arrangement by subject matter content or skill, known as departmentalization.

4. Arrangement of pupils by ability grouping. An example is multiple tracking at the secondary level in which high ability students move along in one group, average achievers in another, and slower achievers in another.

5. Arrangement of pupils by achievement level. (Melbourne High School employs this pattern.)

6. Arrangement can be by interests of the learners.

7. Assignment to a group can be by age or social maturity.

8. Assignment to classes by multi-ages for a diversity of talents.

The League of Cooperating Schools in greater Los Angeles depicts a variety of composites of vertical and horizontal organization based upon the needs of each particular school as defined by the teachers and principal in each school (83). Twinhill Elementary School in Riverside, California, has multi-aged classes based on learning style and teaching style in self-contained classrooms. Cucamonga

Junior High School in Cucamonga, California, is departmentalized according to grades and nongrades with many learners involved in independent studies. Meadowbrook Intermediate School in Poway, California, has multi-aged grouping, continuous progress through subject matter, and multi-sized grouping of pupils based on function of instruction. Such experimentation in a variety of school organizational patterns was advocated by the Committee for Economic Development (26): "We recommend continued and more extensive experimentation in school organization to eliminate the regimentation of students from conventional class units and lock-step method of advancement."

Staffing

The school of the 1960's had a set pattern of staffing across the country to fill the structure of the self-contained classroom. Each teacher was placed on an equal status and responsibility level and was in charge of a set number of children in one classroom. Little interaction took place among teachers and the special talents of individual teachers were usually only enjoyed by the members of his class. A principal was administrator of the school and supervisor of personnel, and was usually more involved and prepared for the former than the latter. In the larger cities and unified districts of smaller towns, a staff of middle management began to burgeon. Specialists in curriculum, music, art, and, in some places, mathematics and science, were placed on a rotating basis to visit the schools of the district. As with the principals, usually the responsibilities of these persons were so great that all they could do was provide a "dusting" of the classrooms and hope that some of their efforts would directly affect the students in the schools.

In the 1950's and 60's, the only avenue for upward mobility of the teachers in the profession was to prepare for specialized curriculum areas, supervision or administration, and ultimately to leave the classroom. Only by leaving the classroom could the better teachers in most towns reach the higher salary levels (63).

Faced with teacher shortages, rising enrollment, and, later, problems of school bond failures, administrators began to search for ways to free the teaching talents of personnel from many of the clerical routines (19). Some schools attempted to hire larger general clerical staff, but a more feasible alternative was to provide for teacher aides. Teacher aides are noncertified personnel who assist the teacher in limited aspects of instruction (12). In 1953, the first city-wide use of auxiliary teaching personnel occurred in Bay City, Michigan, with funds from Ford Foundation. However, until impetus given by the Title I funds of the Elementary and Secondary Act in 1965, there was limited use of auxiliaries for problems. (See section on change.) By 1968, 80,000 teacher aides were working in U.S. schools as personnel (12). Studies of fifteen demonstration programs made by the Bank Street College of Education for the Office of Economic Opportunity summarized seven benefits for the incorporation of aides into the teaching profession:

1. For the pupil, providing more individual attention by concerned adults, more mobility in the classroom, and more opportunity for innovation;

2. For the teacher, by rendering his role more productive in terms of pupil outcomes, and more manageable in terms of teaching conditions;

3. For the other professionals, by increasing the scope and effectiveness of their activities;

4. For the auxiliary, by providing meaningful employment which contributes to his own development and the needs of society;

5. For the school administrator, by providing some solution--not necessarily the solutions to his dilemma of increasing needs for school services, coupled with shortage of professionals to meet these needs;

6. For family life, by giving auxiliaries, many of whom are or may someday be parents, the opportunity to learn child development principles in a real situation;

7. For the community at large, by providing a means through which unemployed and educationally disadvantaged persons may enter the mainstream of productivity.

For the black and other minority groups serviced by Title I funds, the use of, usually members of the community, aides provided a liaison between the school and the community and an open avenue of communication. The San Jose program designed by Rutherford at San Jose College provides for such a liaison between the Black and Mexican-American community and the Anglo-teachers of that community.

Recognizing that teachers are unique individuals possessing special talents, educators have offered alternatives to the notion that one teacher can be all things to a given class of pupils.

One alternative that is often popular during early stages of nongrading is teacher cycling (69). In this alternative, one teacher is assigned to a class of pupils for more than a year, usually varying from two to three years. This assignment is based on the assumption that by knowing his pupils well, the teacher can more effectively work with them in succeeding years. For the pupils, this may be fine if the personality of the pupil and teacher are compatible, but if relationships become abrasive, for the pupils such a teaching arrangement provides more years of the same misery.

Another alternative is team teaching. This method of staff utilization possesses diversity both in methods of organization and purposes (152). This method has been utilized at all levels of educational endeavors and is a rapidly growing trend (54). One of the most encompassing definitions of team teaching is given by Judson T. Shaplin in 1963: "Team teaching is a type of instructional organization, involving teaching personnel and the students assigned to them, in which two or more teachers are given responsibility, working together, for all or a significant part of the instruction of the same group of students (152)." The most simplified form is when two or more teachers are given responsibility, working together, for all or a significant part of the instruction of the same group of students and share teaching responsibilities. This form is often called "cooperative teaching." The teachers may work closely together and teach around a "core" or "unit" of instruction, in which their function and responsibility may vary from day to day; or the teachers may divide the curriculum into areas such as mathematics, reading, and social studies, and each is responsible for a certain area. A more advanced and higher structured team teaching arrangement is the type advocated by John I. Goodlad, in which a team is composed of a team leader, teachers, aides and interns supported by a clerical staff. In cooperation with Harvard University, Franklin School in Lexington, Massachusetts, was developed into a team teaching school. There exists a hierarchical arrangement of teaching staff: superior teachers who assume more responsibility, such as team leader; elementary teachers who are specialists in certain subject areas; and clerical help, teaching aides, part-time teachers and lay resource persons incorporated into each team of teachers (152). This school staff arrangement has provision for flexible and multi-sized groupings of students and teachers from tutorial or 1:1 to discussion group size of fifteen, 1:15, to large group convocations or 1:100. Schools operating with such a teaching arrangement have the following benefits:

1. Specialization of teaching responsibilities to capitalize on unique talents of each staff member (152).

2. Veteran teachers can assume the responsibility of supervising less experienced personnel, rather than an overburdened administrative principal (152).

3. With specialized positions, teachers can be rewarded on the basis of talent in teaching and assumption of responsibility (152).

4. The teacher is able to benefit by increased interaction with other teachers in planning and sharing ideas. (Sherman Oaks School, |I|D|E|A| League of Cooperating Schools.)

5. Evaluation of pupils and teachers results from intimate and shared contact among teachers (152).

6. Arrangement of pupils can be highly flexible based upon different interest areas, ability and achievement, and function of instruction. (University Elementary School; University of California, Los Angeles.)

7. Aides, part-time teachers, and para-professionals can be utilized efficiently (152).

8. Students can choose from an array of adults for modeling of behavior and satisfaction of emotional, social, and cognitive needs.

Since each school is different, no one ideal type of team organization can be applied in all situations (152). Again, the League of Cooperating Schools provides examples of how different schools began to implement team teaching. Edison Elementary in Santa Monica, California, began to utilize cross-age helpers, older pupils to work with younger pupils. Meadowbrook Intermediate School in Poway, California, has flexible teams of teachers that cooperate by grade or by specialty, and by sub-team. Andres Arevalos School in Fountain Valley, California, began experimenting with different structures of team teaching, from cooperative to a team with aides. At the secondary level, team teaching may be structured around a single discipline as in Melbourne High School in Florida or around a core or unit of study as in Wayland School in Massachusetts.

A more advanced theory for teacher organization is the "hospital model," so named because of the patterning after the staffing at a large hospital (54). This model is "characterized by a high degree of hierarchical and lateral differentiation in functional status and specialization." This model takes into account sociological trends toward greater specialization and staff differentiation in all fields (168). The traditional role of the principal is removed and replaced by management specialists. Teachers will operate in teams with master to journeyman teachers, student interns, specialized function teachers, technicians for support systems, paraprofessional aides, clerical help and outside consultants. Teachers will become "team workers and process specialists as well as content specialists." The 1971 summer session at the University Elementary School, UCLA, under the direction of Dr. Madeline Hunter, experimented with a project of the hospital model. Master teachers operated as "doctors" in diagnosing and prescribing pupil needs. Paraprofessionals acted as "nurses" in carrying out the individual prescriptions. Teams of "doctors" and "nurses" met to evaluate results of such staff teaching. A follow up of the transfer of such training of paraprofessionals as "nurse-type" teachers to their local schools will occur in Fall 1971.

The ten models of elementary education teacher training being funded by the United States Office of Education have taken into account the need for such differentiated staffing (42). Opportunities for a diversity of specializations in education are incorporated into these teacher training plans. The emphases in these models as in the hospital model is that staff mobility should occur from within a specialization and not from one specialization to another. One of the major staff changes is educating for the role of the new principal. The new role provides for a person trained in coordination techniques of administration and not in supervision of staff instructional techniques.

Bernard H. McKenna has developed a model for a differentiation of teaching responsibility based on the three major learning tasks of elementary and secondary education pupils: "the mastering of basic skills, the development of talents; and the development of interpersonal attitudes and behaviors." (101) Teachers would receive special advanced training to become either:

1. Teacher technologist with skill in administering basic skills and knowledges.

2. Liberal enlightener with a skill as a master presenter (e.g., lecturer).

3. Identifier of talents with skill in promoting pupil exploration into broad fields of inquiry.

4. Developer of talents and aptitudes and extending individual growth in specialized fields, as music, mathematics, writing.

5. Facilitator of attitude and interpersonal behavior development who possesses talent in the behavioral sciences.

Organization of Time

Currently, most schools operate on a school year that lasts around 180 days. During the frantic efforts of the curriculum reform movement to shove more and more content into the curriculum, educators examined the alternative of lengthening the school day and the school year so more content could be covered. The University of the State of New York studied the effects of a lengthened school day on the achievement of elementary pupils (173). Their findings indicate minimal achievement gains of pupils experiencing the longer day than those undergoing a regular school day. Efforts to lengthen the school year have arisen at various times during this century. Most plans were developed for economic reasons for total utilization of school plant facilities and staff to meet rising school enrollments. Recent efforts in increasing the school year are to remove the nine-month school year as " remnant of an agricultural society" that no longer meets today's urbanized, technological demands on society and to increase the educational opportunities available to the youth (119). NEA's reasons for pursuing alternatives of a rescheduled or extended school year include:

1. Economy. Instead of building new facilities, utilize existing facilities all year, and utilize personnel full-time.

2. Improvement in teacher status. Teachers could be paid for a full year's employment and not need to seek part-time summer employment.

3. Need for fewer teachers. In times of teacher shortages, regular teachers would operate on a full-year basis.

4. Need for pupil acceleration. Feasibility studies of pupil achievement in extended year programs indicate children will arrive at the same level in one and

a half to two years less time than normal schedule (167).

5. Keep youth busy during summer months. Since the picture of summer at the "fishing hole" has changed to summer on the "asphalt," advocates of extended school plans suggest there might be a reduction in juvenile delinquency.

6. Reduce academic loss during extended summer vacation.

7. Reduce in pupils with social and emotional problems that amount of adjustment needed to cope with a change of routine and social environment.

In summarizing a report by the University of the State of New York on alternatives of the extended school year, James B. Allen wrote: "However, it is doubtful that much support for most lengthened school year programs will be found unless specific educational objectives are combined with objectives of fiscal economy. . . . Ultimately, the actual amount of the savings depends largely on what the administration expects to get out of the extended school year. If the superintendent is determined to save money, he can do so. If he is equally concerned about improving the overall program, he will probably plow most of his savings right back into the program(119)."

Several model plans have been put forth and some have been implemented and studied. Popular reaction to extended school year programs as recorded in a 1967 Gallup Poll, and studies made in districts, indicate that at this time, only summer school attendance on a voluntary basis has any support by parents, teachers and pupils (119). Since school scheduling affects a large majority of the population, all advantages and disadvantages must be carefully studied and weighed before being implemented in a community. The New School proposed by SDC would operate on a 12-month year and 15-hour day (105).

Many models have been designed and implemented for scheduling the school day. One of the most inclusive models was developed at Indiana University based on the writings of J. Lloyd Trump who points out the need for scheduling time to provide for quality individualized instruction and school and staff organization (99). It has been named IndiFlexS, a shortened form of Indiana Flexible Schedule. It was designed to meet the following needs:

1. Varying class sizes within and between courses.
2. Instructional groups that meet at varying frequencies and for varying lengths of time.
3. Flexible staffing arrangements so teachers can be assigned singularly or in groups as the nature of the instruction dictates.
4. Instructional decisions made by teachers about "students, content, and teaching methods."

The traditional organization, especially at the secondary level, was characterized by sameness of order and time (99). Classes met daily and at the same time. This scheduling was based on the assumption that all content was evenly divided and needed regular and ordered time for coverage. The modular system of scheduling is based on different assumptions:

1. Group size varies according to instructional technique.
2. Number of groups one teacher may have is different from that of another teacher.
3. Different content areas require different lengths of times and may demand various class sizes.
4. Teachers require team planning and in-service development time.

The IndiFlexS system uses the week as the time division or cycle. Days are divided into fifteen modules of thirty minutes each (99). As determined by function, a class can connect as many modules as needed. For example, an inquiry session in social studies may need about ninety minutes to work, so three modules are assigned to that group. Teaching assignments will vary. Teachers who are planning lectures will need more planning time than one working with small research or inquiry groups. Group meeting time for teachers to plan effective instruction needs to be incorporated into the schedule (99). Some teams may need more planning time than others, but minimum time for each team should be scheduled. Additional time blocks might be arranged.

Scheduling for flexible learning is an all year job. Manlove asserts that since the "schedule puts the fence around what teachers and students can and cannot do in the formal school day, it should be discussed in detail, element by element." (99) Working on a schedule is an all school project since the goals and objectives of the school are reached through the instructional decisions of when, where, how long and with whom certain kinds of instruction should take place. This kind of modular scheduling assumes the uniqueness of teachers and that one teacher cannot be interchanged with another as in a standard machine. The "schedule is built on the competencies and on the recommendations of the teachers. . . . Research on student behavior at Brookhurst Junior High School in Anaheim, California, indicates that there is no student problem in adjusting learning behavior to a weekly cycle rather than a daily cycle . . . within each particular school."(99)

An alternative to this strict scheduling of time is an approach of the "free school" of Pacific Day School in Mill Valley, California. Pupils are free to choose the amount of time spent on any activity and the teacher's time is totally released to operate as a resource person for pupil learning (21). Another alternative is the scheduling of classes or meetings and voluntary pupil attendance as in the Bay High School in Berkeley, California (21).

Organization of Space

"Although other factors undoubtedly play more important roles than does the school's physical environment in the amount and quality of a child's learning, no discussion of curriculum would be complete without reference to the school plant and its furnishings. Man is a multi-sensory animal, and as a student, his daily experience both within and outside the school is significantly influenced by the space within which it occurs. Many curriculum objectives are difficult and perhaps even impossible to attain unless the physical setting enables certain things to happen. On the other hand, the environment can cause or facilitate certain learnings that may not have been intended. Sensitivity to the ways that environment can influence human behavior is therefore a part of the equipment that curriculum planners should bring to their work."(4) "Harold Gores . . . who has studied these things as educational components, estimates that the quality of environment makes about a 15 percent difference in what the child learns."(4) The way the environment is structured indicates the philosophical assumptions on which the ensuing education rests. For example, the need for order in the Montessori school, or a belief that physical activity stimulates learning, or a desire for submissive discipline, or a call for social interaction, all lead to different spacial organizations (4).

The traditional structure built for the self-contained, graded classroom school was the "egg-crate" arrangement of basically equal-sized cubicles with desks and chairs arranged to face the front of the room and the teacher. In a report on the school plant, Robert Anderson states ". . . the blunt fact is that most school buildings in America are miserably unsuited to the needs of today's children, and in the cities, particularly, children are expected to learn in an environment that is often cheerless, frequently ugly and uncomfortable, usually obsolete by a whole range of standards, and not uncommonly, dangerous."(4) With the recent trend toward school organization of nongradedness, team teaching, individualized instruction, and the addition of technologically developed instructional equipment, a new design of school plant is needed. A new school design is termed "the open school plan" or "open space" school. This structure is designed for flexible arrangement of space to meet the changing needs of pupils and teachers. In a recent national survey of 43 states, Stanford's School Planning Laboratory showed that 50 percent of the new schools constructed in the past three years are the open space type and in California almost all schools are of this type of construction (44). "Opening up of the classroom box signifies more than a shift in geometry for it offers the promise of a new era in learning--in a style which acknowledges that the individual child had no peer."(36)

An example of the open structure school at the preschool level is the Early Learning Center at Stamford, Connecticut, funded by the Educational Facilities Laboratory. This laboratory, funded by Ford Foundation in the late '50's, has played a significant role in developing designs and materials to meet the current needs of educational changes (4). This school is a 4,000 square foot structure with modular units that provide for freedom of movement and grouping. All furniture is mobile and can be arranged by the teachers and children. Wall arrangements, fixtures, and furniture are constructed for the scale of the preschool occupants. The architect terms the inside of this structure "omnidirectional space: a single, unobstructed room offering a variety of milieus; quiet corners, busy courtyards, light and dark places, open areas, protected nooks, spaces for contemplation and places for work, even the easy choice of indoors and outdoors." An example of open structure at the elementary and secondary level is similar but large in size and scope to meet the demands of each age level. A common design is an arrangement of "pods," which can be flexibly subdivided by teams of teachers and pupils through the use of partitions, mobile furniture, and multi-purpose storage and work units (34). Attached to these open areas are spaces for specialized pursuits such as art, music, and physical education which require special materials and equipment. Such designs allow for changes in technology and pedagogy so that expensive structures cannot easily be outdated by future changes (36).

An alternative to the open plan school is a structure labeled the "loft plan." In this structure, all space is divided by moveable partitions. This plan is more expensive to construct, has poor noise control, and utilizes more staff time for restructuring space (99).

A third alternative is called "planned variability"(99). In this plan all space is allocated for certain activities of the team-taught school, with special rooms assigned for large groups, others for small groups, and areas for individualized or tutorial instruction. This alternative suggests that solutions of how future space should be allocated are already known and these allocations might be easily outdated by major future changes in school organization and staffing. High schools in Lexington and Wayland, Massachusetts, are examples of this plan.

A fourth school plan is the community or "town-hall" school. The rationale behind this use of school facilities was succinctly put by Harold Gores, "Adults need the schoolhouse as much as children do. . . . To put the matter in bluntest terms, the schoolhouse in the slums should be the people's college, their town hall, their cultural center, their country club, their school. . . ."(4) During "off-hours" the school building is used by the community. Some areas within the structure may be especially designed and reserved for certain community activities. Community school programs in which the school is only the hub of activities that take place out in the community are the Parkway Program in Philadelphia, in which the high school is headquarters for meetings of the students, and Metropolitan High School in Chicago. In these, learners go into the hospitals, museums, offices, theaters, auto repair shops, and other places of interest (4).

"Rapid population growth, shifts of population, deterioration of existing facilities, and new demands posed by educational innovation and reform have confronted educators and taxpayers almost everywhere with the problems of expanding and renovating the school plant."(4) Older schools can usually be adapted easily to the open structure plan by opening walls, putting corridors to use, purchasing flexible furniture and partitions where feasible. The open space school costs no more to construct or maintain than the traditional self-contained classroom school (99). When developing a plan for a new or remodeled school, designers at a seminar under the joint sponsorship of Educational Facilities Laboratories, Inc., and |I|D|E|A| indicate that each design should take into account the following factors: "The amount of time youngsters spend in school, maximum utilization of the premises, the grouping of students, the deployment of faculty, the multitude of new mechanical teaching aides to be used, and the part the schoolhouse plays in modern education."(36)

Ole Sands, in the 1971 Yearbook for the National Society for the Study of Education, notes that trends of the educational institution are "[from] the self-contained classroom to the community-wide school; [from] school building use geared to an agrarian, nine-month year, limited to children, [to] school building use reflecting urban society, twelve-month year, available to all age groups."(142)

And finally, a comparison of the use of time and space from the traditional classroom to the open plan classroom was made from Herbert Kohl's The Open Classroom (92), and indicates the directions schools of the 1980's should move.

		TRADITIONAL	to	OPEN CLASSROOM
TIME	1.	Day in rigid periods.	1.	Flexible.
	2.	Activities pre-planned.	2.	Activities as alternatives.
	3.	Teacher-structured.	3.	Group-oriented.
	4.	Teacher-directed.	4.	Non-directive.
	5.	Teacher-assessed.	5.	Pupil-assessed.
SPACE	1.	Structured with front, back, sides of classroom.	1.	Communical center of group life.
	2.	Teacher-planned.	2.	Space planned by pupils.
	3.	Teacher-centered, with room organized to face teacher.	3.	Used differently at different times--flexible arrangements.
	4.	Closed.	4.	Community-oriented: movement of ideas and pupils between school and resources.

	TRADITIONAL	to	OPEN CLASSROOM
STAFF	1. One teacher per one group of pupils.		1. Pupil choice.
	2. Assignment by administration.		2. Free and multiple selection based on needs and interest.

SECTION VII: SCHOOLING FOR 1980

In light of our educational assumptions which point the way to quality education for the 1980's, and in light of our knowledge of alternatives and promising practices which exist today, it is possible to suggest a rather clear, though broad conception of schooling for 1980. This view of schooling differs somewhat from the picture of schools reported in the introduction which is based on current criticisms. The changes in schools suggested in the introduction were inferred from these criticisms. However, our projections for changes in schooling for 1980 are based on our educational assumptions and the array of alternatives available to us. There are many similarities between the two. In lieu of offering specific recommendations we prefer to offer our vision of what schooling could become in the 1980's. If this vision even begins to approach reality, the impact of schooling will have significantly improved.

A community school will be open year round from early morning to late evening serving students of all ages. Education appropriate to children as young as three or four would be offered; the facilities and resources of formal schooling would be available to older children and youth--or for any age student who needs the concentrated study offered by the school. Physical and human resources would be available to older youth and adults as they pursue their individual interests, talents, skills and needs as these persist or change throughout the life span. Community resources of all types will be extensively used--parks, businesses, industries, museums, people with all types of skills and expertise, geographic features, governmental agencies, social services and any other resource which a student of any age may need. The school program will be organized according to phases of human development. There will be an array of appropriate goals established by the local school for varying developmental levels, and the goals will be reflective of the needs, values, and desires of that particular community as well as of the broader societies of which the student is a part. During the more formal period of a student's life, the goals will reflect common expectations for developing knowledge, skills, attitudes, values and action patterns needed by all members of a democratic, pluralistic society and members of a mankind world for which the school as a social institution has prime responsibility. At every developmental level, there will also be goals to allow for the development of each student's own unique potentials.

The school will be staffed by a variety of personnel: teachers with differing competencies; clerical assistants; counselors; specialists in evaluation, in particular areas of the curriculum, and in human growth and development; and aides with various assigned roles and areas of talent. Teachers will function in a variety of roles--resources for learning, counselors, learning guides and facilitators. School personnel will be supplemented by an array of people with all types of talents and expertise from the community at large as the student needs them. Multi-media instructional products which have been learner-tested will be available so that students can select those which have the content and skills he needs or desires in a way which matches his own learning style. These products will be available to him for his own pacing and manipulation.

Flexibility of time and space will be an essential characteristic of schooling for the 1980's. Space will be provided for storing and using the array of learner-tested multi-media learning materials and products; space will be available for individual pursuits, small group interaction and for specially prepared large group programs and presentations. Space will be flexible and will be arranged as the demands for the various-sized groupings with a variety of purposes occur.

Learning schedules will be individually determined so flexible modules will be employed. Students will be encouraged to learn to manage their own time as a valuable resource in their learning process. Schedules will be planned in relation to learning expectations held in common for all students and for idiosyncratic selections. Time spent in pursuit of an education will not be spent entirely within the school structures but will be spent much more extensively in the broader community as those resources are utilized.

The curriculum will implement those goals for common learnings as well as those for self-actualization. The curriculum will emphasize processes, skills, knowledge, attitudes and values needed for self-renewal in a rapidly changing society. A variety of curricula using several bases will be available. This will require carefully developed standards by which the quality of the curricula and materials can be judged and wisely selected by both educators and students. The individual student will be guided and actively involved in planning and implementing an appropriate curriculum for himself. The school will be organized so that continuous progress can be made toward the goals which direct the student's learning at all levels of schooling. The entire educational system will be in support of the goals and curriculum. This will include regulations regarding utilization of resources, the quality of interaction among students and all members of the faculty and staff, and the geist or general emotional climate of the total institution.

Evaluation data will be collected on an individual basis for all student outcomes--anticipated and unanticipated--and will be given as feedback to the student and his teachers for assistance in diagnosing learning difficulties, determining attainment of levels of development, and in prescribing for next steps in learning. Evaluation of student progress will be criterion-referenced rather than norm-referenced. Evaluation data will be available to the faculty so that the impact of the various parts of the educational system upon the students can be studied and improved. This will require that both formative and summative evaluation procedures will be utilized.

Instruction will occur through a variety of media, personnel, roles and methods which are supportive of the intent of the goals and curriculum. Active processes for students will be emphasized, and each student will be encouraged to explore, study and investigate at all levels of schooling. Content will be utilized largely as means to achieve desired goals. Instruction will occur in an atmosphere of inquiry, freedom and openness.

Students will be viewed as anyone studying or investigating, regardless of his age. The individuality of each student will be recognized and evaluated with his biological, social, psychological and educational needs assessed and utilized in planning his program. His assets will be capitalized upon, and attempts will be made to correct or compensate for his liabilities. Students will be viewed and utilized as resources to the school.

Boundaries between educational institutions and other social institutions will become clouded and perhaps obscured altogether as the demands of formal schooling, work, leisure, and self-expression will be more relevant to student concerns and to their present lives. Education will have meaning for living now as well as in the future. Attendance will be largely out of choice and not out of externally imposed authority.

Schooling will be operated from a research and knowledge base rather than on the basis of tradition, routine practices, and historical precedence. Active inquiry will be occurring constantly into problems associated with improving the quality of education each student receives. The process of schooling will be viewed as a system in which one part has an effect on all other parts. Formative evaluation will occur as the various parts of the system are designed, studied and changed for greater impact upon desired student outcomes. Much study and thought will be given to the type of person the educational system should assist in developing.

This, then, could be schooling for the 1980's. The vision in the preceding paragraphs is not beyond the realm of possibility, but it will not occur without planning, allocation and distribution of resources. It will require much effort. Resistances to change and acceptance of the status quo must be overcome and acceptance and planning of the future must become the accepted action pattern.

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President's Commission on School Finance

Report of Task Force C

STRATEGIES FOR CHANGE

by

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INTRODUCTION

From 1955 to 1965 countless inventions appeared on the American educational scene. There were such interesting, provocative and potentially productive ideas as nongrading, team teaching, inquiry training, updated and discipline-centered curricula--particularly in science, math and social studies (43). There was also the introduction of multi-media instructional techniques, programmed instruction and even computer-assisted instruction. To be sure, there were equally provocative inventions before 1955. But from 1955 to 1965, the rate of educational invention definitely accelerated.

By 1965 the nation through its media had become aware that while these exciting ideas were much discussed, they somehow were not yet part of the mainstream of American education. As a result of this awareness, thoughtful educators and Congressmen, working together, developed and put into effect both the Elementary and Secondary Education Act (ESEA) and the Higher Education Act (HEA). Such legislation was even more significant because it represented a real breakthrough in three formerly worrisome social areas: (a) racial integration, (b) Federal involvement in education, and (c) separation of church and state.

At the time of the passage of ESEA and HEA, or perhaps somewhat before, the nation's conscience had been awakened both subtly and violently to the fact that large segments of its population--its minorities and its poor--had little access to "regular" educational opportunities, let alone the inventions which were being discussed. The result was the passage of the Equal Opportunities Act (EOA), which established the Office of Economic Opportunity (OEO) in 1964 and the Manpower Development Training Act (MDTA) in 1965. Out of this legislation came educational programs such as Head Start, Job Corps, and vocational retraining for adults (46).[1]

The Congress of the United States, through the passage of this educational legislation during the mid-sixties, expressed a clear intent. Education was to change. It was to upgrade curriculum and instruction. It was to develop and experiment with newer programs. It was to conduct research and implement the findings of this research. It was to upgrade teacher education. It was to improve vocational training opportunities within schools and in industry. It was to give increased access to higher education to populations formerly excluded from such opportunity. It was to make vital forces out of formerly caretaking state and intermediate educational agencies. Above all, education was to focus on across the board improvement of educational opportunities for the majority of the nation's people who resided outside of economically favored suburbia: those in urban and rural America. The significance of this legislation was two-fold. First, through their elected officials, the people of the United States had made the greatest commitment to education of any peoples in the history of the world. Secondly, this commitment was to high-quality education and to equality of educational opportunity for all of its citizens. *Historians for decades to come will note this affirmation of faith by a people in education as a means of improving its society* (134).

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[1] A discussion of the Federal enabling legislation for education, with particular emphasis upon urban problems, can be found in: Guthrie, James W. "City Schools in a Federal Vise," in Frank W. Lutz (ed.), *Toward Improved Urban Education*. Worthington, Ohio: Charles A. Jones Publishing Company, 1970, pp. 273-305.

With such an affirmation of faith in education less than a decade ago, and with the passage of so much enabling legislation, why do we now find so few of our schools actually adopting or implementing the educational improvements which have been developed over the past twenty years? The answers to this question are not simple ones. However, in such answers reside many clues to the central theme of this report, how to bring high-quality education and equality of educational opportunity to _all_ the people of our nation.

In an attempt to deal with this issue, this section of the report will do the following:

1. Examine seven factors which have inhibited educational change during the past decade, including inadequate finance, the temporary reversion to a concern for basic needs, value dilemmas, vested interests, the bureaucratic nature of our educational system, confusion in educational decision-making, and the leadership vacuum in education.

2. Set forth the assumptions, strengths, problems and potentials of major educational change strategies which are presently in operation. These include the research, development and diffusion strategy; the social-interaction strategy (the agriculture model); the problem-solving strategy; and the educational materials improvement strategy.

3. Set forth the assumptions, strengths, problems and potentials of several newer and/or emerging educational change strategies, including political systems strategies, personnel retraining, systems planning, experimental centers, alternatives to public education, mass communications, and self-help and peer group strategies.

4. Make recommendations regarding the support of various strategies by the Federal Government and others as means for reaching the goals of high-quality education and equality of education for all citizens of the nation.

FACTORS WHICH INHIBIT EDUCATIONAL CHANGE

It becomes almost trite to suggest that we are living in a period of history marked by rapid change. Yet it is true. And we must face it. Carl Rogers poses the significant question, " . . . Can [man] leave the static ways and static guidelines which have dominated all of his history and adopt the process ways, the continual changingness which must be his if he is to survive?" (130)

In the United States, education is looked upon as one of the key institutions, if not *the* key institution, for helping the greater society to deal with its problems. Yet, education itself tends to be a static institution with its practices lagging anywhere from fifteen to fifty years behind what research and enlightened opinion tell us is good (96). This situation must change; it is that simple. However, before we can design strategies for changing education into a vital force in our society, we must know what those factors are which cause it to remain static. Some of these factors are briefly examined here.

Inadequate Finance

Economic abundance is a major factor in the encouragement of social change, including educational change (33). At the same time, history has a way of playing the meanest of tricks upon men of good intentions. Herein lies one of the answers to the relative failure of Federal enabling legislation to create significant change in American education.

At the time of the passage of EOA, ESEA, HEA, and other Federal legislation, the economy of the United States appeared to be quite healthy. Further, it was generally assumed that Federal financial support of all of its educational programs would increase significantly as the years passed. For example, Title III of ESEA, which was designed specifically to encourage educational innovation, received $75 million during fiscal year 1966. This was raised to $145 million during fiscal year 1967. Those who administered the program at that time planned on the basis of the following suggested budgets for the ensuing five years (34):

Fiscal Year	Millions
1968	$ 250
1969	630
1970	1,500
1971	2,000
1972	2,500

Based upon such projections, numerous projects were approved and funds committed during fiscal 1966 and 1967 for periods of up to three years. Many of these early projects were far from innovative, some funded primarily on the basis of state dollar quotas. But they were a beginning. The notion was that new and better projects would be funded in subsequent years from increased funds made available by the Congress while, at the same time, original projects would be completed.[5]

By fiscal 1972, funding for Title III-ESEA was actually only $146.25

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[5] This writer, under a grant from the Fund for the Advancement of Education, Ford Foundation, worked in the Division of Plans and Supplementary Centers, Bureau of Elementary and Secondary Education, USOE, during fiscal year 1966. During fiscal years 1967 and 1968 he was an independent consultant and reader for this Division, which administered Title III-ESEA.

million, or only slightly more than one million dollars above the 1967 funding level. This is a far cry from the $2.3 billion projected for fiscal 1973 some five years earlier.

The escalation of the war in Indochina, inflation at home, and the generally depressed economy, all have caused Federal spending for education to remain constant or to rise only slightly over the past five years. In fact, the United States has _not_ been able to maintain a "guns and butter" economy.

The educational finance picture is even gloomier when state and local levels are considered. Without the anticipated massive infusion of Federal dollars into education, state and local governments have had to rely upon traditional and already burdened sources of income in order to finance public education—namely, sales taxes and property taxes. With inflation and intensified competition for funding for social services at these governmental levels, education has not fared well. In Los Angeles in 1971, for example, the city raised property taxes some three percent. The county followed suit by approving a rate increase of nine percent. Neither raise in rate required the vote of the people. When the independent Los Angeles City Schools proposed a tax increase, the voters turned it down overwhelmingly _for the eighth straight year_! And—the picture is much the same all across the nation, with many school districts on the verge of bankruptcy, particularly in urban areas. Perhaps it is safe to conclude that schools and school districts can hardly be expected to promote innovation when they are, in fact, struggling to stay alive economically.

Resistance to the Satisfaction of Basic Needs

In 1968, the Institute for Development of Educational Activities (I|D|E|A), an affiliate of the Charles F. Kettering Foundation, commissioned a nationwide Gallup Poll on educational innovation (87). A sample of parents, teachers, school board members and school administrators was surveyed concerning their attitudes toward educational innovation. Gallup reported four major findings: (a) all groups surveyed were in favor of educational innovation, (b) each group surveyed felt that the other groups were more resistant to change, (c) all groups pointed to the "general public" as the "great ogre of educational change," and (d) the public is willing to have educators innovate as long as it does not mean increased taxes. The results of the survey seem to indicate that since change is generally an accepted and desirable thing in American society, education can and should move ahead with new and improved programs. It is not that simple, however.

Abraham Maslow characterized human beings as operating at four levels of needs (88). These were (a) physiological—needs for food, rest, exercise, shelter, and health; (b) social—needs for belonging, association, acceptance and so forth; (c) ego—needs for independence, achievement, knowledge, respect, and so forth; and (d) self-fulfillment—needs for realizing one's own potential, for continued self-development and for being creative. Individuals, according to Maslow, can be seen as moving from one level of need to another as soon as the previous need has been satisfied.

A parallel to Maslow's hierarchy of personal needs can be drawn in terms of social needs, social change in general, and educational change in particular. During those periods of time when basic personal needs are not being adequately met, the people and their governments almost totally turn their energies to meeting these needs, be they employment, food stamps, WPA, or minimal education. During times of relative plenty, with basic needs met for at least the majority of the people, collective concern tends to turn to meeting more and more social wants, be they medical care, production and distribution of more and more material goods, cultivation of the arts, space exploration or expanded educational opportunities.

Throughout history, collective mankind has demonstrated its tendency to move through the satisfaction of this hierarchy of needs--basic to creative. To be sure, this movement has not been in a straight line. Progress has been slowed, halted or even reversed by events such as economic depression, war, plague, drought, power seeking individuals and groups, or by revolution or less violent means of equalizing power between those who share less and those who share more in the benefits of man's progress.

The point is--and the ethologists assert[5]--that man will continue to change and improve his way of living over the long pull (6). However, there will be periods of time when circumstances will cause him to revert to the satisfactions of basic needs, since they are always of highest priority.

By 1965, our active commitment in the United States to a progressive society, including improved education, was at an historical high. While there are many reasons why this commitment has waned over the intervening seven years, circumstances such as war, inflation, unemployment and even pollution have caused us as a people to revert to concern for basic needs rather than higher, more creative needs, including improved education. But this, too, shall pass. Men of reason will make it so.

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[5] Ethologists have presented strong evidence to demonstrate that man still operates from many animal instincts. Perhaps the best known reference is: Ardrey, Robert. The Territorial Imperative. Atheneum Press, Inc., 1966.

Value Dilemmas

Even with massive funding and even with general sanctions from the public as a whole, education will not be easy to change. John Gardner has said, "We all know in our bones that over the long haul what we do in education has the greatest relevance to building the kind of society we want."(30) But herein lies the problem. It is not altogether clear what kind of society we do want. We are caught on the horns of several dilemmas. Do we continue with increased technology and urbanization or do we move to a more person-centered society? Do we continue to believe in the "market place" or do we move to more highly centralized forms of long range planning? Do we continue to believe in authority based upon voluntarily given support? How can we seek unity within our society while also promoting diversity (pluralism) (51)?[8] As a nation we do not seem to be dealing with these or other serious value questions. We are "muddling through," and as a consequence our institutions, not the least of which is schooling, are trapped in a kind of inertia, not really moving anywhere.

"Change anything you want, but don't rock the boat." This direct quotation from a school superintendent perhaps captures the present state of American education quite well. We are more willing to "tinker" with schooling. We add a course here or there. We change materials of instruction. We lower the age for schooling, but we do much the same with these younger children as we have done with their older brothers and sisters. All the while, we avoid serious alterations in education because they are too controversial and we know that someone will be unhappy with them. Until we can clarify our societal values or until we can design institutions which can be responsive to diverse values, little significant educational change will occur.

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[8] For an extensive review of these and other value dilemmas facing American education, see: Harman, Willis W. The Nature of our Changing Society: Implications for Schools. ERIC Clearinghouse on Educational Administration. Eugene, Oregon, 1969.

Vested Interests

The endorsement of educational innovation "as long as it doesn't raise taxes" is an obvious form of vested interest which inhibits significant reform. The fear on the part of white parents, real or rationalized, that school integration will lower the quality of education for their children, is another example. But as Goodwin Watson points out, vested interest may be more than a matter of economics, personal gain, or even prestige (141). It may reside in something as simple as freedom to operate as one pleases. A recently completed case study of a large school district in Southern California provides an example. The district was highly successful in decentralizing much of its decision-making to the school level, involving parents, teachers, the principal and even students. Everything went well for at least two years, until those at the cabinet level, the various assistant superintendents, began to realize that their roles had changed significantly--they were now responsible for serving the needs of others rather than directly making decisions for others to carry out. At this point these "leaders" became the major stumbling blocks to change.

Donald Michael has pointed out that men in organizations spend years in learning successful behavior and in developing self-satisfying images. The tendency then is to protect this success by making present institutional formats work with minimum change (92). Overcoming the human tendency to guard one's own interests takes much time and a good deal of re-education of all involved.

Bureaucracy and Adherence to Norms

To date, the most rational method known to man for insuring the accomplishment of his institutional purposes, is to establish bureaucratic structures. Such structures are effective in maintaining order and control and in implementing common means to accomplish common purposes. Schools have become highly bureaucratized units within highly bureaucratized school districts. Standards of attainment are common for all or most pupils. Curricula and pedagogy are standardized. State or district syllabi and state or commercial textbooks dictate how and what is to be taught. Further, there is a proliferation of policy, rules and regulations, most of which are restrictive and which mitigate against change. In the State of California, things have come to such a pass that the State Legislature has been forced to pass legislation which allows school districts to ignore previous legislation in order to innovate.

Beyond formal rules and regulations in bureaucratic organizations, there are more subtle and even more powerful informal means imposed which inhibit innovation. Norms, which are customary and expected ways of behaving, grow up over the years. Watson lists time schedules; modes of dress; forms of address to colleagues, superiors, and subordinates; indications of institutional loyalty; personal ambition to rise; appropriate consumption; and forms of approved participation in recreation and community life as powerful norms which inhibit change in bureaucratic institutions (141).

Because the majority of individuals within an organization share norms, those who advocate change or who deviate from these norms will either be pressured to conform or will be ignored or excluded. Even institutions which have been set apart with sanctions to operate differently for a time tend ultimately to be forced to conform to the norms of the greater system (93).[5]

Nothing short of altering the bureaucratic structures of educational institutions will suffice if we are really committed to significant educational improvement. Rather than decisions being made by those at the top of some hierarchy to be passed down for others to implement, we need, for example, structures which will allow for participatory decision-making. There is much movement in this arena, and although it is troublesome, it is promising.

The literature on how we socialize or develop normative behavior in our children and the populace in general is fairly dismal (44, 56). We need to begin educating our young to the fact that conformity is not the rule, seeking a higher level of creativity is. Nor should we delude ourselves about the seeming activism of the youth on our campuses. To be sure, many of them are sincerely dedicated to social justice and to change. But the majority of our youth still hold the same values as their parents. Alice Miel and Edwin Kiester state the case as follows:

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[5] See for example the literature on what happened to experimental schools and colleges in: Miles, Matthew B. (ed.) Innovation in Education. New York: Teachers College; Columbia Press, 1964.

> The child of suburbia is likely to be a materialist and somewhat of a hypocrite. He tends to be a striver in school, a conformist, and above all a believer in being "nice," polite, clean and tidy. He divides Humanity into the black and the white, the Jew and the Christian, the rich and the poor, the "smart" and the "dumb." He is often conspicuously self-centered. In all these respects, the suburban child patterns his attitudes after those of his parents.(95)

If we do not alter this pattern, if we do not resocialize ourselves to accept and plan for change, our society may decay. What may be left in the not too distant future is what other formerly great societies have had, reflections on past glories.

Confusion in Decision-Making

Never before in history has so much knowledge been available to man. And yet we hear much about credibility gaps in government and much about accountability in education. The fact is that we are daily bombarded with so much information that we have great difficulty in sorting out truth from fiction, salesmanship from exposition, or the relevant from the irrelevant. Heretofore, we have relied upon the general public to act as the guardian of its own interests by understanding what they are and by promoting them through the elective process. As Michael points out, this traditional belief is more myth than fact (92). He cites the thorough research of Angus Campbell and his associates when he says:

> . . . [the general electorate] is almost completely unable to judge the rationality of government actions; knowing little of particular policies and what has led to them, the mass electorate is not able to appraise either its goals or the appropriateness of the means chosen to serve these goals. . . . However great the potential ability of the public to enforce a set of coherent policy demands at the polls, it is clear that this power is seldom used in American politics.(38)

With increased technology and the otherwise growing complexity of every walk of life, including education, the responsible layman will have to think in terms of many variables, in terms of interactions and in terms of cause-effect relationships. Further, he will have to rely heavily upon the so-called "highly skilled expert."

Few people think in these ways today. Rather, as a people, we tend to rely upon common sense or what might be called conventional wisdom as we make significant decisions which, in turn, seriously affect our daily lives. Nowhere more than in education do we see such a condition. Everyone has gone to school and thus has some experience with the phenomenon of schooling. More often than not, school board members, parents and the public make important decisions about what should happen in their schools based upon these past experiences or other conventional wisdom. As with other professional groups, educators themselves often use their own special language in conveying to the layman what they believe should be done in schools. Such language, based upon expanded knowledge, is often more confusing than helpful to the layman. The use of conventional wisdom as a basis for decision-making is a major impediment to educational improvement.

Education has become a complex enterprise. It involves government at all levels. It involves literally millions of decisions made by the lay public, by administrators, by the intermediate educational agents who influence what teachers do, and by the teachers themselves. The movement to have more participation on the part of all concerned in education may be a healthy thing for education and it may be a blessing in terms of revitalizing grass roots involvement in democratic processes. However, it may be neither of these if there is confusion in terms of who makes what decisions and if there are not adequate information systems developed for those who do make decisions.

The Leadership Vacuum

James Lipham, in writing about educational leadership, has distinguished between the roles of administrators and leaders (83). He points out that a leader is primarily concerned with the creation of new structures or procedures for achieving the goals of the institution or with the establishment of new goals for that institution. The role of the administrator is to use existing structures and procedures to achieve existing goals. The fact is that most people in key roles in education, as well as in other walks of life, have been educated and have gained reinforcing experiences as administrators.

By and large, school administrators are selected from the ranks of those who have been successful teachers. This, in itself, is a problem. Michael states the case as follows:

> . . . Most of today's teachers and educational administrators were themselves educated, and are still being educated, on the basis of social perspectives that are insensitive to the cognitive and emotional requirements [for a changing society]. Most primary and secondary school teachers—and this is the level, if not earlier, where these things have to be taught—come from backgrounds more at ease with a conservative view of life, suspicious of the strange, the innovative, the spontaneous, comfortable with the requirements, certainties, rewards, and the moral assurance of the Protestant ethic. Hence, there is no reason to suppose that, short of disaster, major, widespread changes are likely to be the lot of education in general over the next decade at least. . . . (95)

School administrators, after being successful teachers, are trained in such things as educational law, school governance, supervision, educational business procedures and school curriculum. Generally, this training is in "how to do it," and these "how to do its" are derived from past and present practice. Seldom is any of this training couched in systems-thinking which deals with the relationships among variables, cause and effect, or prediction. Few administrators have either a strong liberal arts background or a background in the behavioral sciences. Change as a social and/or educational phenomenon is hardly ever included in any training for those who do or will hold key positions in education. The result is that school administrators use the past as a data source as they attempt to deal with the present and to plan--if they do--for the future. They rely on policy and regulations to conserve the values, attitudes, and procedures which have made schools successful in the past. However, as conditions change, what was successful in the past may well not be successful tomorrow. Unless we can develop a cadre of educational leaders who know how to plan, who know how to work with and influence others, and who have a quality perspective regarding the social and educational milieu, education will not move forward. It will not be a viable institution for assisting with the problems of a society which is becoming ever more complex. And time is short!

EXISTING EDUCATIONAL CHANGE STRATEGIES

Title III of the Elementary and Secondary Education Act was specifically devoted to encouraging educational innovation. In the fall of 1967, the administrators of Title III commissioned a position paper on the process of educational change to include specific recommendations on the implementation of Title III (195). By the fall of 1967, Title III was entering its third full year of operation. Thus, for over two years monies had been allocated specifically for educational change with *little or no* thought given to how such change occurs.

There is little need to recount the hectic days when the Office of Education—understaffed both in quality and quantity—geared up to administer Title III and the other titles of ESEA; when a continual stream of consultants passed through the halls of USOE—many looking for grants; when the many calls came from Congress, all supporting some proposed local project or other; and when almost immediate pressure was applied by Congress for outcomes.

The fact is that Commissioner Keppel and Commissioner Howe after him, with limited staff and resources, accomplished what amounted to a Herculean task when, with Congressional support, they transformed the U. S. Office of Education into a meaningful force in American education for the first time in its history. If the U. S. Office of Education was to be criticized for its inattentiveness to change processes during the mid-sixties, it was not alone.

Morris Janowitz, in writing about change in slum schools, has pointed out that prior to 1965 most change efforts were fragmented in nature. Such efforts were largely directed toward the development of model demonstration projects rather than the planning of fundamental institution building. The fate of such projects has been accurately described by Janowitz as follows:

> They have tended generally to be small scale and short lived, with professionals learning that results are not cumulative but rather seem to be disjunctive. There is a high turnover of personnel so that the components of a particular demonstration have gradual extinction. The most critical argument is that after a decision to spread the demonstration project throughout the system, it faces death by diffuse and partial incorporation. Now the emerging phase is that of strategic innovation, or institutional building, which focuses on the system as a whole. It involves a strategy from the top down, it is more comprehensive in scope, and it is concerned with the realities of authority and decision making. (69)

In retrospect, then, one could suggest that in regard to educational change we have for nearly a decade had the cart before the horse. We have been concerned too much with the singular implementation of specific changes without devoting adequate thought and resources to strategies for creating a lasting, self-renewing capacity for change in our educational institutions.

However, there were those during the mid-sixties and earlier who concerned themselves with basic change processes in education. Centers such as the Northwest Regional Laboratory (NWRL), the Center for the Advanced Study of Educational Administration (CASEA), the Cooperative Project for Educational Development (COPED), the Institute for Social Research (ISR), Research for Better Schools (RBS), the Ohio State Research Foundation, and the Institute for Development of Educational Activities (|I|D|E|A|) have and will continue to produce valuable information and practice concerning how American education can be improved. Arising out of the work of such centers and with a basis in anthropology, sociology and social psychology, a few well-defined and somewhat operational change models have been utilized in American education for some time.

The remainder of this section will describe three of these change models in depth: (a) the Research, Development and Diffusion Model; (b) the Social Interaction Model; and (c) the Problem-Solving Model. The work of Ronald Havelock of the Institute for Social Research will be relied upon heavily (55).

In addition, one other means which has been used to improve American education over the past decade will be discussed. American schools have always relied heavily upon the textbook and other forms of instructional materials. As a result of the curriculum reform movement of the fifties and early sixties, and as a result of many demands from school people for more "relevant" and/or more individualized instructional materials, commercial publishers have responded with vastly improved, often ingenious materials over the past fifteen years or so. For lack of a better term, this shall be referred to as the Curriculum Materials Improvement Strategy.

The presentation of each strategy will include: a brief overview; an examination of underlying assumptions; identification of problems and limitations; description of an example of the model; identification of decision-making, or "who decides what"; and finally, exploration of the potential of the strategy for improving American education.

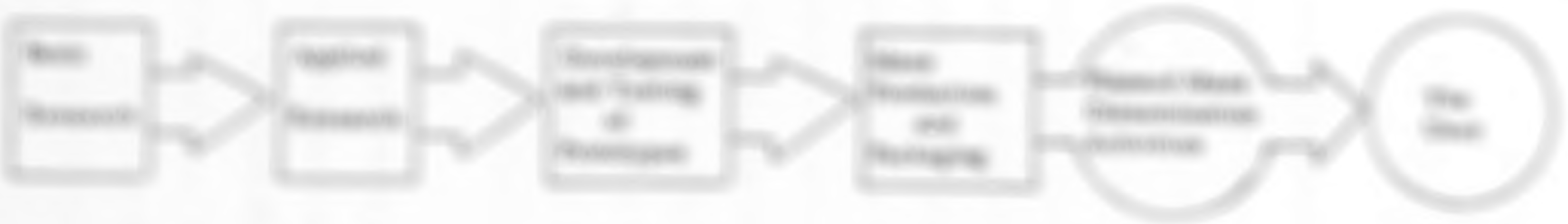
Research, Development and Diffusion Strategy

1. Explanation

[illegible]

[illegible]

[illegible]


Basic Research
Applied Research
Development and Testing of Prototypes
Mass Production and Packaging
Planned Mass Dissemination Activities
The User

Assumptions:

1. Rational Sequence
2. Planning
3. Division of Labor
4. Passive but Rational User
5. High Investment Pays Off in
   Quality, Quantity, Long Term
   Benefit, and Capacity to Reach
   Mass Audience

Evidence:

1. Rural Sociology
   (e.g., [illegible] [illegible])
2. [illegible] [illegible] [illegible] –
   [illegible] [illegible] [illegible]
3. [illegible]

FIG. 1. The Research, Development, and Diffusion Perspective.
Adapted from Havelock (1969, p. 11-15)

is on the planning of change on a large scale (Havelock, 53). This involves detailed development, based on scientific knowledge, and rigorous testing and evaluation to produce an innovation which most adequately solves a particular problem. It also involves mechanisms for distributing the innovation and installing it in target systems. The planning of change is conceptualized in terms of a theoretical framework which describes the change process as a continuum of activities from research to practice, and a rational division of labor is specified for carrying out these activities.

In summarizing, Havelock (53) states that the RD&D model seems to be a particularly popular and appropriate one for dealing with dissemination and utilization issues at the macrosystemic and policy levels because it subdivides the knowledge flow system neatly into different roles which exist within different subcultures (e.g., the research community, the product organizations, the practitioners, the consumers). It does appear to supply much of the rationale for current policy planning in the U.S. Office of Education.

II. Assumptions

Besides the assumption made by the American people that basic science is useful to man and therefore worthy of public support, Havelock (53) lists the following assumptions under the RD&D perspective:

First of all, the RD&D model suggests that dissemination and utilization should be a rational process: there should be a rational sequence of activities which move from research to development to packaging before dissemination takes place. Second, this model assumes that there has to be planning, planning on a massive scale. It is not enough that we simply have all these activities of research and development; they have to be coordinated; they have to be interrelated; and they have to make sense in a logical sequence that may go back years in the evolution of one particular message to be disseminated. Third, there has to be *division* of labor and a separation of roles of functions, an obvious prerequisite in all complex activities of modern society, but one that we sometimes forget. Fourth, it assumes a more or less clearly defined target audience, a specified *passive consumer*, who will accept the innovation if it is delivered on the right channel, in the right way, and at the right time. The particular process which is supposed to assure this happening is scientific evaluation, evaluation at every stage of development and dissemination. Fifth, and finally, this perspective accepts the fact of *high initial development cost* prior to any dissemination activity, because it foresees an even higher gain in the long run in terms of efficiency, quality, and capacity to reach a mass audience. These five features make RD&D a very useful and relevant paradigm for technical and social change.

III. Problems and Limitations

There is nothing in the RD&D model that deals with the complex and intricate sets of human substructures and processes existing in both intrapersonal and interpersonal settings that must be operative before diffusion will succeed. Havelock (53) says that RD&D policy makers tend to ignore these factors when they assume that the best innovations diffuse by themselves or when they assume that new ideas can be conveyed successfully through publications or other mass media alone.

In criticism of the RD&D model, Havelock states that the model can be said to be over-rational, over-idealized, excessively research oriented, and inadequately user oriented; however, because this model has been laid out so concretely by Guba and his colleagues, it gives other educators something to shoot at, figuratively as well as literally.

As stated previously, the RD&D strategy appears to supply much of the rationale for policy planning in the U.S. Office of Education. The operational intent of much of the Elementary and Secondary Education Act (ESEA) would appear to have developed from this point of view. Title IV reinforced support of Research and Development Centers at major universities and provided for the establishment of Regional Laboratories at various sites around the nation. The former were to perform the basic research needed to improve American education. The latter, to be somewhat more field oriented, were to develop newer applied techniques for schools based upon the basic research of R&D centers and their own applied research. Through Supplementary Education Centers established by Title III-ESEA, and the Educational Research Information Centers (ERIC) of Title IV-ESEA, all of this research and these newer practices were to be disseminated to the practitioners. Finally, through Titles I and II of ESEA, monies were made available to ensure that these new practices found their way specifically into schools which had "culturally disadvantaged" or "poverty" populations. Later, through the passage of the Education Professional Development Act (EPDA) in 1968, this whole process was reinforced, implicitly or explicitly, through the provision of monies to retrain practitioners and through bringing researchers, developers, and practitioners together.

Three major problems have tended to subvert this strategy, as rational as it appears. First, and surprisingly, at the time ESEA was enacted there was a great "gap" between researchers and practitioners in education. To be sure, teachers and administrators received their pre-service training at colleges and universities. To be sure, professors often consulted in local school districts. However, professors often were involved in esoteric and/or microcosmic research which was less than useful to practitioners. They weren't aware of "real" problems of teaching. Teachers, on the other hand, had little understanding or appreciation of theory or research. While such a condition continues to prevail in much of education, ESEA has had an effect in improving the research-practice gap.

Second, the critical linkage between research and practice was the Supplementary Education Centers. In theory, they were to be manned by those knowledgeable in both fields. Early in the history of Title III-ESEA it was proposed that this function be emphasized and that a nationwide network of such centers be established. However, such a proposal failed for three practical reasons: (a) there were not enough qualified people to man such centers; (b) emphasis in Title III-ESEA was placed upon funding exemplary projects; and (c) the notion of a federally funded network of supplementary centers was anathema to state departments of education (186).[6]

Third, impatience and lack of funds came into play. By fiscal 1967, two years after the enactment of ESEA, Congress was beginning to ask for results, particularly of research. Many labs and centers had barely "tooled up" to define their problems, set out to come up with proposed program strategies, or staffed adequately to do their jobs, when they were being called upon to show results. Subsequently, several labs and centers were closed down. Often, those which did survive were the ones which were able to pull together some extant practices, package them neatly between colorful covers, and demonstrate that they, in fact, had "products."[7]

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[6] Tye, Kenneth A. "The Supplementary Center." Mimeographed. U.S. Office of Education, 1966. Summary written with Louis Rubin, 1967. This position paper proposed a national network of federally funded Supplementary Centers, many of which would have served combined rural-suburban and suburban-urban metropolitan areas. Amont the functions of such centers would have been long range planning, the encouragement of metropolitan cooperation, and leadership development.

Thus, while the RD&D strategy has been successful in many ways, its over-rationality tends to overlook problems such as vested interest, value questions and the interactions necessary for final adoption of new ideas.

IV. Example

We do not find here that one particular model seems to be generally "accepted" as the RD&D model. Thus, we will look at what Havelock (53) calls a typical model, the Guba and Clark Theory-Practice Continuum:

Guba and Clark have proposed a schematic continuum for change in education which is designed to bridge the gap between theory and practice. This continuum includes four major phases or areas of activity: research, development, diffusion, and adoption. In addition, certain subactivities are specified within each of these phases. The authors consider a process of evaluation to be appropriate to each of the activities listed on the continuum, and, therefore, no one stage of evaluation is specified.

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[7] It should be noted that by fiscal 1970, Title III-ESEA had been given to the states to administer. A partial reversal occurred in fiscal 1971, when fifteen percent of the monies of Title III were reserved for "discretionary but categorical" use by USOE. States rights had won and the guarantee of national priorities had lost except as those with faith in "local control" might interpret the matter.

A. Research: Its objective is to advance or extend knowledge. It may be evaluated only in terms of its own validity, not in terms of whether or not it leads to invention and change. Its relationship to the change process is that it may provide a basis for innovation if anyone else chooses to capitalize on the research.

B. Development: Divided into two subactivities; (a) invention--the significance of invention in the change process is that it produces the innovation in its initial conceptualized form; (b) design--the results of this activity are to be evaluated in terms of the institutional feasibility, the generalizability and the performance of the invention. Guba stresses the significance of the combined developmental activities in the process of change and he states that it is this activity, and not research, which is at the heart of change.

C. Diffusion: Divided into two subactivities; (a) dissemination--criteria which are to be used in evaluating dissemination activities include the intelligibility, fidelity, pervasiveness and impact of the message; (b) demonstration--to be evaluated in terms of its credibility, its convenience, and its evidential assessment, i.e., whether or not it illustrates all factors of the invention, both positive and negative, so that observers may make a valid decision as to its utility. Guba also suggested other diffusion activities which involve the diffuser more directly with the practitioner, such as helping, involving, training, and intervening with the practitioner.

D. Adoption: Divided into three subactivities; (a) trial--the innovation may be evaluated at the trial stage in terms of its adaptability, its operational feasibility and its performance in local situations; (b) installation--the criteria for evaluating successful installation of the invention are in terms of its effectiveness and efficiency; (c) institutionalized--the invention must be assimilated as an integral and accepted component of the system and should be evaluated in terms of continuity, the degree to which the invention is valued, and the support given to it by the local setting.

In summary, Guba points out that the theory-to-practice continuum was designed to bridge an existing gap between research and practice. He does not expect that in real life every activity described will be or should be performed, nor that they should necessarily be carried out in the order given. The possibility of breakdown in the process at any stage is recognized, and in some cases it is necessary to loop back to a preceding stage to rectify the problem.

Guba and Clark have proposed a schema for planning the process of change in an orderly way and for defining the activities which may take place at each stage of the change process. In this way the roles and functions of individuals and institutions taking part in the process may be planned to provide continuity and to prevent gaps or overlapping of activities.

V. Decision Making

Decision making about the innovation is to be largely left to the developer in the RD&D perspective (53). However, as researchers more and more come to work with practitioners and become increasingly aware of what the real needs of schooling are, it is possible that decisions will be reached jointly. Also, in a time where accountability is an important factor in education, the ultimate user will more and more have to be involved in decisions about adopting a new program. After all, one cannot be held accountable for that over which he has no decision-making authority or responsibility.

VI. Potential

According to Havelock (53), the RD&D model has been a part of American culture for at least a generation. Because this model appears to have been so elegantly mapped out and successful in the field of agriculture, it has been used as an exemplar of how knowledge dissemination and utilization should take place in other fields such as technology, medicine, and education.

The question can be posed as to whether a change process model applicable to one field (agriculture) can be applied to other fields (technology, medicine, education). Havelock states that a number of authors have suggested that social science utilization is uniquely different from natural science utilization. If this is true, Havelock notes, we should certainly try to identify where and how it is different before we create vast national dissemination and utilization programs based on a hard science model. However, there is little concrete evidence that substantiates this "uniqueness"; usually what we find in education, for example, substantiates what we have already learned in agriculture. We have been impressed at least as much by the the commonalities in process when we compare across fields as by the disparities. Hence, at this point we would suggest that the question remains unresolved.

In summary, if the RD&D model is indeed applicable to educational innovation, then it continues to remain a potentially powerful model for change. However, some authors within the RD&D perspective have indicated that more attention has to be given to the adoption end of the continuum in order to produce the desired results in education. In any event, it does not appear at present that the RD&D strategy has as yet produced real changes in the schools--the millions of dollars spent under ESEA Titles have not transformed American schooling. However, in defense of the strategy, it has not had a real test free of such problems as vested interest and lack of leadership.

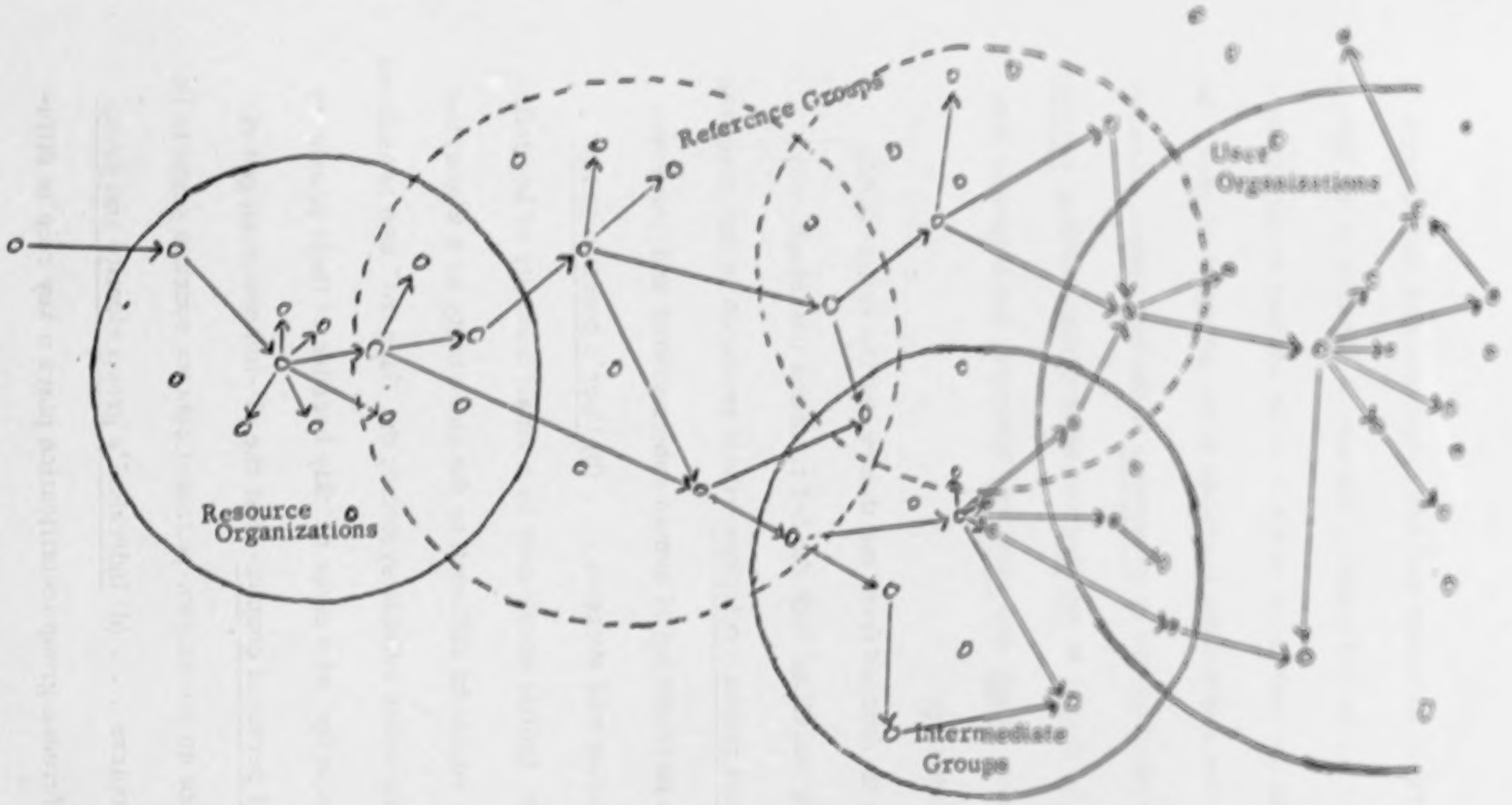
Social Interaction Perspective

I. Explanation

According to Havelock (53) the Social Interaction (S-I) strategy emphasizes diffusion, i.e., measurement of the movement of messages from person to person and system to system. The S-I viewpoint sees society as a network of roles and channels of communication with organizational and formal and informal associations forming barriers and overlapping connections (see Figure 2). It has given us the theory of the two-step flow of knowledge and has thoroughly demonstrated the importance of such factors as opinion leadership, personal contact, and social integration.

In the S-I perspective, an innovation, usually in the form of a product or practice, is presented or brought to the attention of a potential receiver population. The receiver and the receiver's needs are defined and determined exclusively by the sender. The receiver is supposed to react to the new information, and the nature of his reaction determines whether or not subsequent stages will occur. If his awareness is followed by an expression of interest, he is launched on a series of stages which terminate with acceptance or rejection of the innovation. The diffusion of the innovation depends greatly upon channels of communication within the receiver group since information about the innovation is transmitted primarily through the social interaction of the group members.

Havelock further states that studies in this area have shown that the most effective means of spreading information about an innovation is through personal contact. Thus, the key to adoption is viewed by authors of this school to be the "social interaction" among members of the adopting group. Most of the studies


Resource Organizations
Reference Groups
Intermediate Groups
User Organizations

Assumptions

1. Concrete Innovation
2. Social Relations Networks
   (e.g., Norms, Rewards, Supports)
3. Informal Personal Relations
4. Differing Stages and Corresponding Strategies (e.g., Opinion Leaders, Early Majority, Resisters or Awareness, Interest, Evaluation, Trial, Adoption)

Problems

1. Pre-conceived Innovation
2. Difficulty of Tracking
3. Mal-adoption
4. Non-User Oriented

KEY

o o Individuals in the Social System
→ Flow of new knowledge
) Formal organizational structures
⁚ Informal structures

FIG. 2. The Social Interaction Strategy
(adapted from Havelock (53), p. 11-8)

come from the literature on rural sociology and are concerned with the adoption of agricultural innovations. For all the S-I models, the unit of adoption is the individual. Since it is assumed that the innovation which is to be adopted is already in a developed form, suitable for use and readily available to the potential adopter, the initial stage is generally described as one of *awareness* of the innovation. Awareness will usually be followed by stages in *interest* and information seeking, *evaluation* in terms of decision making, *trial*, and *adoption*; however, the sequence may be truncated by rejection at any stage.

Six major points can be derived from the theory and the considerable quantity of empirical research identified with the S-I tradition (Havelock, 53): (a) *The importance of the social network relations*--their research in this tradition has shown that a complex and intricate set of human substructures and processes must be operative before diffusion will succeed . . . (b) *User's position in the network*--"Opinion leadership" (initial acceptance by a small minority of key influentials) is the major factor in succesful diffusion to the community as a whole; the "innovator" has many links with other outside systems; the "laggard" who is isolated and perhipheral; the "early majority" who adopt quickly because of their proximity to leadership . . .(c) *Informal personal contact*--For the all-important stages of deciding whether or not to adopt an innovation, personal contact sources seem to be the most significant for all adopters . . . (d) *Individual's group identity and group loyalty*--The psychological reference group identification plays a key role in diffusion as studied by the S-I school. People tend to adopt and maintain attitudes and behaviors which they perceive as normative for their psychological reference group . . . (e) *Essential irrelevance of the size of the adopting unit*--The same phenomenon has been studied using a remarkable diversity of adopter units (individuals, groups, industrial firms, school systems, for example) . . . (f) Significance of stages of adoption--(Awareness, Interest, Evaluation, Trial, Adoption). It has been shown that different types of influence strategy are most effective at different stages (mass media, demonstration, contact with experts, informal contact with peers). Armed with this knowledge, the change strategist can plan out a synchronized multi-media program of influence which has optimum likelihood of achieving maximum dissemination and utilization.

II. Assumptions

The Social Interaction model of change is less a strategy than it is a way of studying how change occurs. It has its roots in anthropology, but it has practical applications to change, as we shall see later.

According to Havelock (53), the existence of a concrete innovation is assumed. Thus, there is no "real" concern for research or even development.

Another assumption of the S-I strategy is that schools operate as social systems, with their members--teachers, community, administrators--in interaction with other systems such as professional associations, colleges and universities, unions, parent-teacher groups, and community-action groups. Much research has shown that the more local educators and community members have such contacts, the more innovation occurs in their schools (112). The notion is that new ideas pass from one system to another to another via individuals.

A third assumption of the S-I perspective is that there are various social psychological stages of change through which all individuals pass. This is the awareness, interest, evaluation, trial, adoption cycle popularized by Lippit, Watson and Wesley and by Rogers (84, 112).

A fourth assumption of this strategy is that different individuals hold different positions in the social network of changing education. There are opinion leaders, innovators, laggards, the early majority who adopt soon, and the resisters. The latter category has led to much research on reasons for resistance (34, 91).

III. Problems and Limitations

Havelock (53) suggests that the following problems are connected with the Social-Interaction change model:

1. The processes related to invention, research, and development of innovations have not been studied from the S-I perspective.

2. The translation, transformation and adaptation of innovations which go on as they are diffusing through the system has been understudied.

3. The processes of maladoption, inadequate or inappropriate adoption, and rejection have been given less than adequate coverage.

4. There is a rather loose and sketchy understanding of the psychological processes of the user adopter. External social influence processes are rarely tied to either attitude change research, personality theory, or learning theory research in psychology, despite the fact that an enormous body of presumably relevant knowledge exists under all three of these headings. This is perhaps due to the fact that most S-I authors are sociologists, rather than psychologists.

5. Finally, although S-I research can be cited which bears on flow to

to the organization and adoption by the organization as a total unit, little has been said about what happens to knowledge flow within the organization even with respect to such elementary structural features as the formal organization chart.

IV. Example

The Social-Interaction change model is primarily a post-priori, empirical model for studying what has happened when change has actually occurred. However, there are portions of this model, at least, which do point to strategies. Of particular import is Rogers' paradigm. It has application for anyone in a change agent role who is actually working with the ultimate user or adopter of an innovation.

The first paradigm (see Figure 3) shows the psychological stages through which adopters pass. These are:

1. Awareness.--The individual is exposed to the innovation but lacks information about it and is not yet motivated to seek more information. Rogers describes this stage as a relatively passive one on the part of the receiver; he feels that awareness of an innovation does not generally come about as a result of a need, but rather that awareness of a new idea creates a need.

2. Interest.--The individual is actively seeking information, but he has not judged the value of the innovation in terms of his own situation. Rogers points out that the personality and values of the individual, as well as the norms of his social system, will influence the direction of his search for information and his interpretation of that information.

3. Evaluation.--A period of mental "trial"; the individual mentally applies the innovation to his present and anticipated future situation, and then decides whether or not to try it.

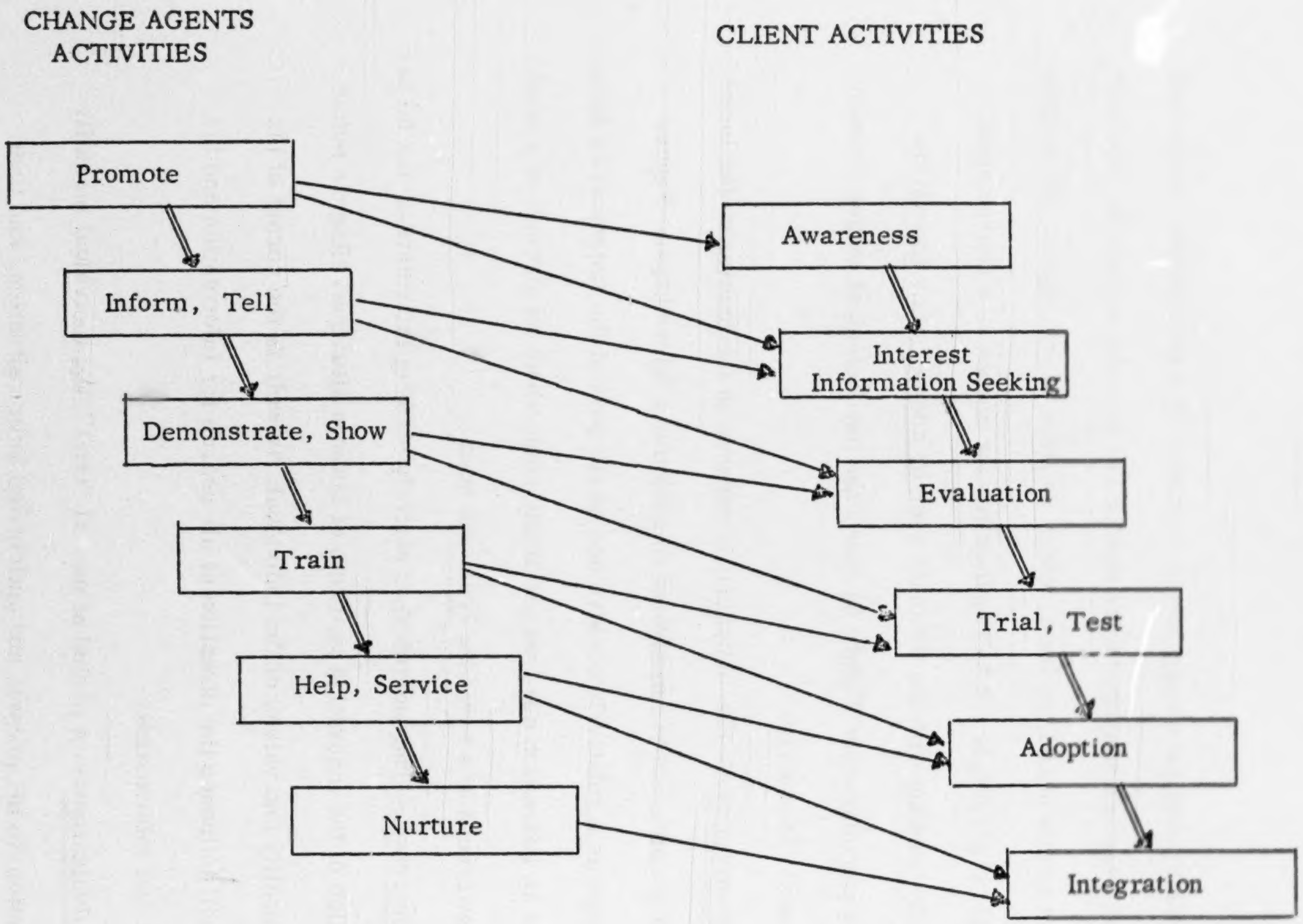

CHANGE AGENTS ACTIVITIES
CLIENT ACTIVITIES
Promote
Inform, Tell
Demonstrate, Show
Train
Help, Service
Nurture
Awareness
Interest Information Seeking
Evaluation
Trial, Test
Adoption
Integration

FIG.. 3. Strategies Within a Social Interaction Perspective--Stages of Change

4. Trial.--Individual uses the innovation on a small scale in order to determine its utility in his own situation; or, the trial is made on a temporary basis.

5. Adoption.--Continued use of innovation.

Similarly, the paradigm shows the activities in which a change agent should be involved as he moves the user toward adoption. Frequently, such stages are overlooked. For example, teachers are often given in-service training in how to use a new technique before they are really even aware of a potential innovation. The result may well be resistance, if not outright rejection. In reality, in-service training should occur at that point in time when enough teachers are ready to test or try the new technique. Similarly, visitations to other schools where a new practice is being used should take place; not randomly, but when teachers are at a stage of evaluating the merits of a new idea.

In the second paradigm (see Figure 4), the suggestion is made that there are different targets for the change agent. For example, in a social system such as a school probably five to fifteen percent of the people are open to change. They are the "early majority" and can be counted on to be supportive. A second group, sixty to ninety percent, are the resisters. They need special attention and careful strategies need to be employed with them. Also, there are the leaders, formal and informal, and their support is critical. In his research, for example, Demeter noted some time ago the special role of the school principal in innovation:

> . . . Building principals are key figures in the [innovation] process. Where they are both aware of and sympathetic to an innovation, it tends to prosper. Where they are ignorant of its existence, or apathetic if not hostile, it tends to remain outside the bloodstream of the school. . . .(28)

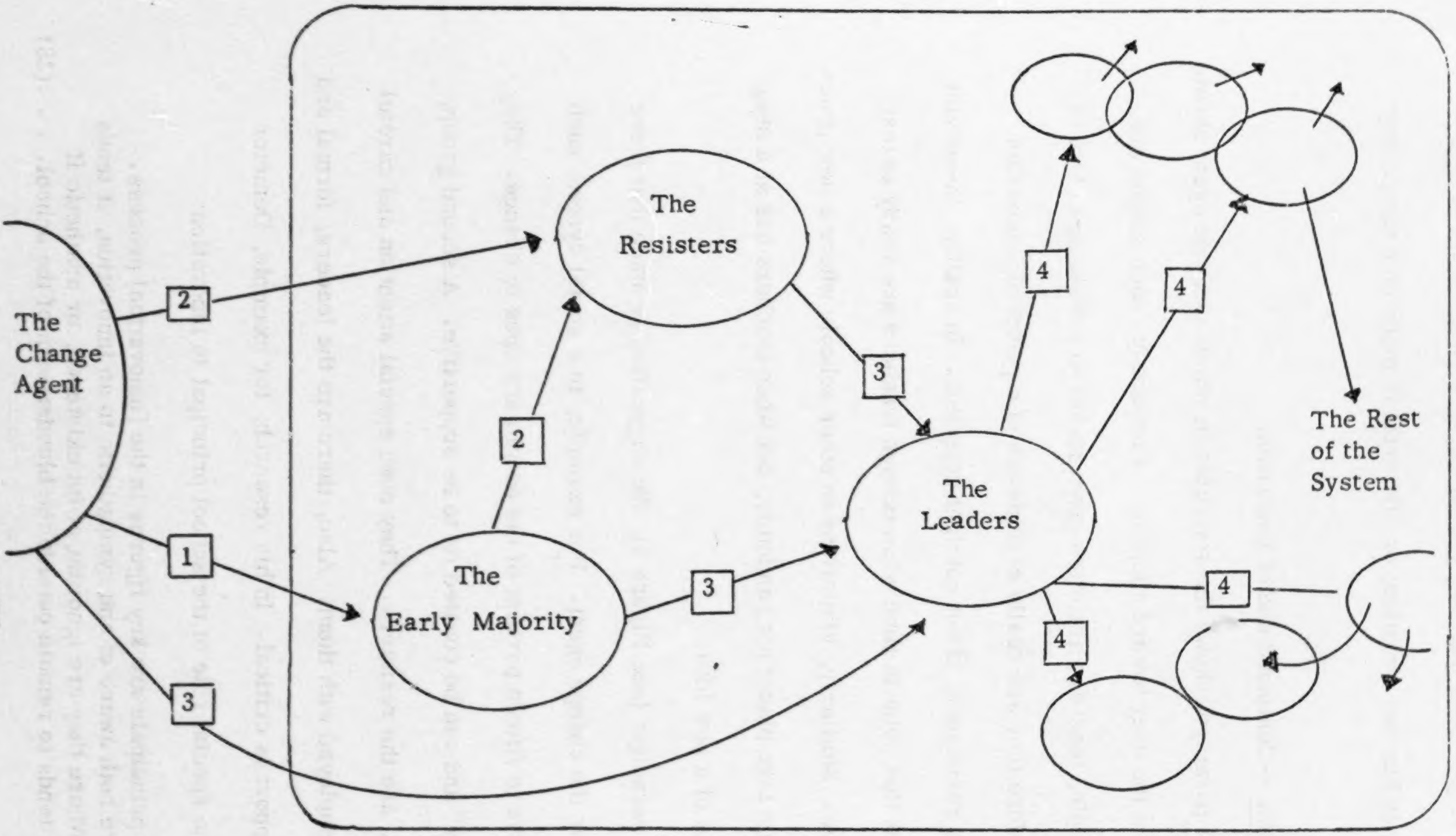

The Change Agent
The Resisters
The Early Majority
The Leaders
The Rest of the System
1
2
2
3
3
3
4
4
4
4

FIG. 4. Strategies Within A Social Interaction Perspective -- People

The point is that the change agent must know the adopter group and must design appropriate strategies often distinguishing among various subgroups, be they staff members or the community.

V. Decision Making

In the Social Interaction model of change, the assumption is made that the change agent is the decision-maker about the innovation. That is, it is assumed that he decides what the adopter will change to. This is a serious problem for two very good reasons. First, as we have shown, people cannot be forced to change until they are psychologically ready. Thus, at every stage, each individual is, in fact, deciding how far he is ready or willing to move, if at all.

Secondly, as with the RD&D strategy, in a time of making accountability explicit, people must be involved in decisions the results of which will be used to measure their success or failure.

VI. Potential

The remarkable consistency of major findings in widely different settings in the Social Interaction model of change (Havelock, 53) has led Bhola of Ohio State University to propose a "configurational" theory of diffusion which permits comparative analysis of patterns of flow and relationships regardless of size and other differentiating characteristics of the specific adopting units studied (10). If the configuration is closely similar irrespective of time, circumstance, and unit size, the significance of Social Interaction research findings is enormous. It means that generalizations from one set of findings in one setting can be applied, at least tentatively, to the analysis of other settings; diffusion research in agriculture and technology can then be used at the very least to make shrewd guesses in medicine, social welfare and education. It is a most significant step toward a general science and an engineering science of change processes.

Little has been done to actually employ the various substrategies implicit in this change model in education. Those who are committed, at least in the main, to the Research, Development and Diffusion Strategy, like the U.S. Office of Education, would do well to require that some funded projects implement a Social Interaction strategy, perhaps using the AIETA paradigm. Such a coupling of strategies could go a long way toward overcoming the major criticism of the RD&D strategy--that is macrosystemic and pays too little attention to the adopter or user. We need a good deal of additional research in combining such strategies in education.

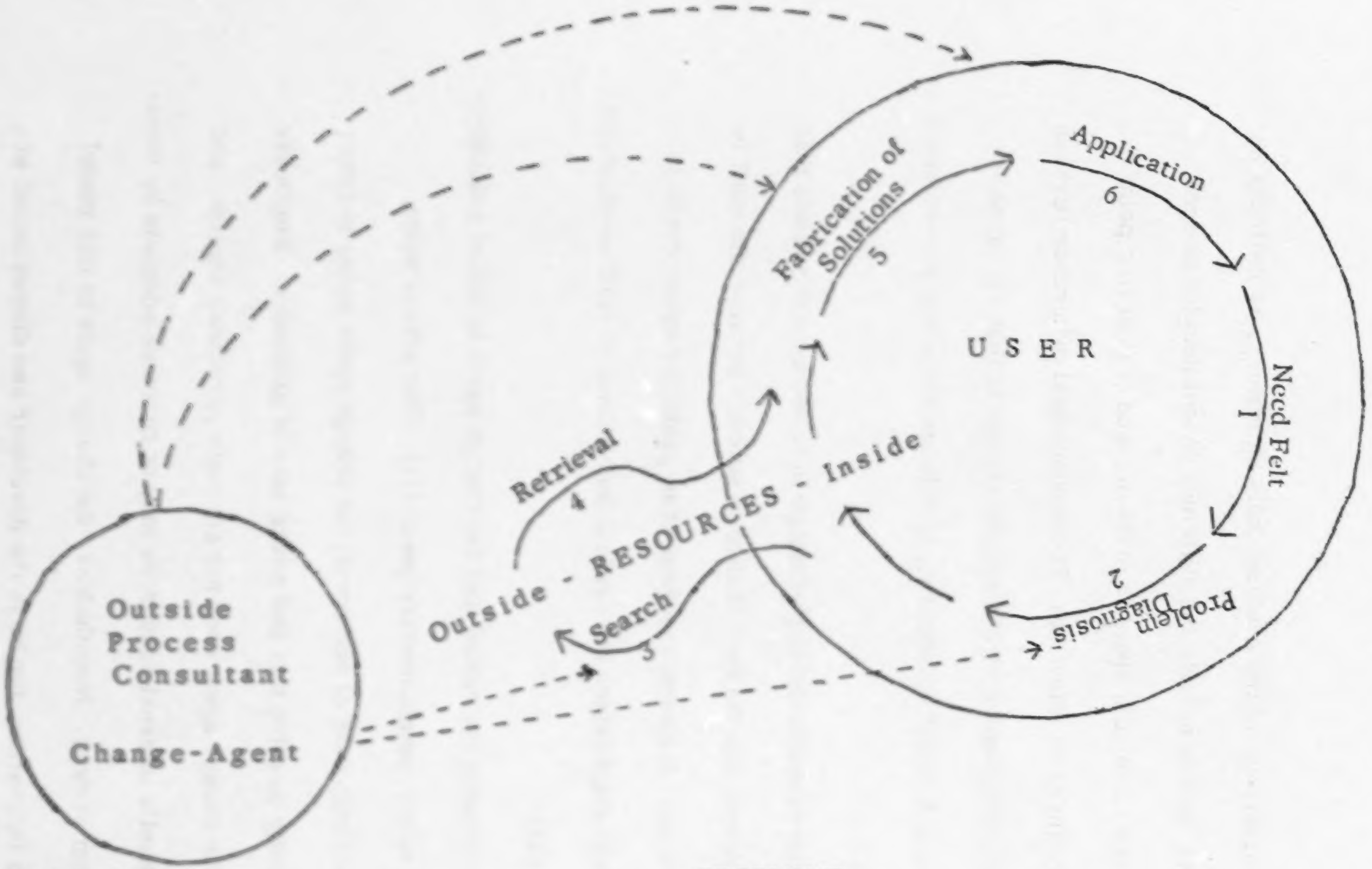
The Problem-Solving Strategy

I. Explanation

The defining characteristic of the problem-solving strategy is its focus on the receiver of innovations. In this model, the staff of a school decides to seek outside assistance/resources to solve a specific problem, and it is at that point that the change agent can begin to be effective. The fundamental difference between the problem-solving approach and other strategies for change is that the problem-solving model is not concerned with disseminating knowledge about any pre-selected innovations (see Figure 5).

The rationale of the problem-solving strategy is based upon the belief that self-initiated change in a school has the best chance of success because the staff is highly motivated to make it so. A recent assessment of problems encountered in attempting to change schools emphasizes the critical importance of staff involvement in any attempted change (114).

The relationship between the school and the change agent is one of collaboration for a limited time to reach complementary goals (11). The school wants assistance in solving a particular set of problems; the change agent wants to help the school improve its ability to solve this and future sets of problems. Emphasis is heavily on process. The change agent does not advocate particular content, and he recognizes that the school's internal resources may at times be adequate by themselves to solve the problem at hand. Nonetheless, the change agent in this model is perceived as the key to innovation, for he is the developer and disseminator of a strategy for change which the school will learn to use. This perspective resembles


Outside
Process
Consultant
Change-Agent
Outside - RESOURCES - Inside
Retrieval
4
Search
3
USER
Fabrication of Solutions
5
Application
6
Need Felt
1
Problem Diagnosis
2

ASSUMPTIONS

1. User Oriented - Own Felt Need
2. Diagnosis Precedes Solution
3. Outside Role Non-Directive
4. Utilization of Internal Resources - Adaptation

PROBLEMS

1. Not enough Process Consultants To Go Around
2. Minimizes Outside Knowledge
3. No Mass Diffusion Potential
4. Homeostasis

FIG. 5. The Problem-Solving Strategy
(Adapted from Havelock, 53, p. 11; 12)

the RD&D approach, with expertise in problem-solving processes substituted for expert knowledge about proposed changes in curriculum or other content areas (54).

It is important to see that the problem-solving model's focus on the receiver of knowledge is construed, in the case of a school, as a focus upon a system (11, 86, 94, 118, 119, 142). This awareness of the school as a system underlies both the intervention objectives and the intervention techniques which are typical of change strategies based on this perspective. Thus, intervention objectives are often stated in terms of developing self-renewing schools--systems that will continue to solve problems after the change agent has left (131, 94, 119, 8). Intervention techniques first take account of resistances within the target system (i.e., the school), and develop strategies to modify both roles and structures in the system in ways that will reduce resistance (140). Throughout the intervention effort, change agents are concerned with the impact of the change upon the total system. Attempts are made to involve in the planning all of the system members who will be affected by the change, and the change agents feed back into the system assessments of the results of the change effort (93, 118). Some advocates of the problem-solving approach go further, and build strategies that include attempts to communicate to other systems information about the effectiveness of the change in the target system (73, 94, 142).

In general, the problem-solving perspective stems from Kurt Lewin's concept of three stages of change: unfreezing, moving and freezing (80). The "unfreezing" stage is usually described in terms of a school's becoming aware of a problem. There is no agreement among the advocates of this strategy as to whether the initiation of problem-awareness is to come from within the system or from an outside source (54). Arguments that call for the outside change agent to start things going seem to be concerned with the typical slowness of inside initiation to manifest itself in school systems, and with the importance of the specialized skills offered by the expert in problem-solving processes (54). Yet the fundamental logic of the problem-solving approach insists that, if internally-sparked problem awareness is not seen as the first step for the change agent, it must be reckoned with as the second step. A school problem perceived by an outside change agent, therefore, is nothing in this strategy until it is felt by the school staff. Simply put, the change agent must either respond to a request for help or convince a school that it should request help.

After "unfreezing," the next stage of change noted by Lewin is "moving." Most of the intervention strategies which are based on the problem-solving perspective expect several occurrences in this stage: (a) some form of diagnosis of the problem, (b) a search for solutions, (c) a decision to try a particular action, (d) planning and implementing that action. This is the period during which most of the intervention activities take place. These activities and the relationships that they involve among school personnel and change agent are often referred to as a "temporary system."(93) The essential idea of such a system is that it provides a setting in which the change agent can guide the school staff into learning more effective ways of solving the problems it has identified. Training sessions, workshops of one kind or another, are the commonly seen forms of temporary systems. The hope is that the school staff will carry over what it has learned in the temporary system to its daily work in the school.

Lewin's final stage of change, "freezing," is variously dealt with. Some emphasize the stabilization within the system of the particular change that has been attempted (86, 84). Taken as an end-point, this stabilization is probably an accurate interpretation of Lewin's description of how any one change comes about. Considered as the basis for a strategy of change, however, the final stage in the problem-solving model must hold some hope for further change. Most of the advocates of problem-solving strategies recognize as an intervention objective some kind of learning by the school staff that will enable it to solve future problems (131, 54, 141, 68), and a few writers speak of the need for the school to institutionalize continuous problem-solving procedures (118, 93).

This recognition that the effectiveness of the problem-solving model as a strategy for change hinges upon the cyclical nature of the problem-solving processes, is evident in the way most of the writers treat evaluation. Although a few describe a discrete evaluation stage associated with the adoption of a particular change (73, 119, 142, 68), most proponents of this strategy describe or imply informal evaluation activities at every stage of the problem-solving sequence (131, 80). Thus, evaluation is perceived as the pervasive element which keeps a school staff always alert to potential change.

II. Assumptions

The fundamental assumption of this model is, of course, that a school is interested in solving its problems, and that it will therefore respond best to innovations which are perceived as possible solutions to those problems. There are probably few who would not subscribe to this assumption, stated in such a general form. But the series of assumptions which follow logically when the statement is made, and which form the starting point for an intervention strategy, may not be so easily accepted. Nor have these assumptions received much attention in the literature on the problem-solving model.

Following is a list of what seem to be the more central assumptions of strategies based on this model.

1. The school, alone or with the assistance of the change agent, will identify problems which (a) are perceived as "real" by the school staff, and (b) can be formulated in a way which allows the staff to attempt a solution.

2. There is some basic pattern of problem-solving processes which can be learned and used effectively by a school staff.

3. The school staff can learn this basic pattern by working through a set of problems during a temporary association with the change agent. Successful learning by the school staff is assumed to hinge upon the skills of the change agent as a facilitator.

4. The school staff can transfer what it has learned during its association with the change agent to new problem situations which it encounters after the association ends. Successful transfer is assumed to hinge upon the skill of the change agent in providing for transfer.

III. Limitations

A major limitation of this model is that there is little empirical research on the techniques that are used in its name (54). We have little evidence, for example, about the comparative effectiveness of working with a cadre of teachers, working with a whole staff, or starting with top administration. Nor do we know much about the relationships between such teaching techniques as sensitivity training and problem-solving games and desirable outcomes of sustained problem-solving behavior in school staffs. A more troublesome lack of evidence concerns the very existence of a basic pattern of problem-solving processes which can be learned by a school staff. Those who have written about strategies based on the problem-solving approach provide content for the steps in problem-solving and present different sequences of steps (54). (A recent study--League of Cooperating Schools, reported in the next section--raises further questions about the correspondence between rational problem-solving models and daily problem-solving in schools.)

The key gap in evidence to many observers, however, is the lack of systematic support for the assumption that staff problem-solving effectiveness is positively related to what happens in classrooms. Problem-solving strategies often recognize effects on children as an ultimate criterion, even though their interventions may not deal directly with instructional practices (94, 119), but to establish relationships, of whatever kind, between staff interaction and pupil outcomes is an enormously complicated undertaking. Certainly it should be attempted, but the slowness of this accumulation of data should not, in and of itself, be allowed to dismiss the hypothesis that the way adult life in a school is constructed affects child life in a school. Sarason, for example, has recently presented a persuasive argument and considerable observational data to substantiate this hypothesis (114).

Some critics (for example, Havelock, 54) contend that a limitation of the problem-solving approach is that it does not fully use the great pool of resources which are offered by formal knowledge-producing institutions. The argument is that the great effort spent in this model on dealing with perceived needs of the school is partly at the expense of effort to help the school become aware of the variety of outside resources that are available. In an effort to right the balance between focus on school needs and recognition of knowledge producers, Havelock offers a "linkage" model for diffusion and utilization of knowledge (54). The linkage model calls for a relationship between the knowledge-producing system and the knowledge-using system in which each system simulates the problem-solving cycle of the other, thereby increasing mutual understanding. Reciprocal simulation seems a sound conceptual base for improving the potential usefulness of new knowledge on the one hand and developing sophisticated search procedures for new knowledge on the other. Unfortunately, as yet we have only very general discussions of how this kind of interaction between knowledge producers and knowledge users might be brought about (73, 68).

Another set of limitations can be related to certain of the assumptions that underlie the model. It is possible that, for any one strategy, some of these limitations may be more logical than real. Certainly, more research would be required to assess the severity of these limitations. Nonetheless, we should consider the potential problems that are built into a general acceptance of this model.

The first assumption, that the school staff will identify a problem or a set of problems which it perceives as real and which can be worked on by the staff, harbors several dangers. To start with, there seems to be disagreement among the advocates of this model as to whether or not the school itself can be expected to initiate the problem-solving sequence which gives the change agent the opportunity to train the school staff. While some writers claim that the school does or should initiate outside contact (73, 86, 142, 84), others doubt that the schools will often originate innovation efforts (54, 93). If one takes the position that the school should make the first move but that schools are slow to seek change, then the problem-solving model has the limitation of failing to do much to counter the homeostastic tendencies of an established system (i.e., the school). The way around this limitation seems to be to adopt a position which allows the change agent to initiate the problem-solving training sequence. Such a move, however, raises a question which has not been discussed in the literature on this model. To what extent is the change agent likely to impose on the school staff his own perception of what problem(s) they should attack? Such an outcome does seem to be a distinct possibility, especially since most problem-solving strategies are based upon training models that at least favor certain conceptual descriptions of problems over others--for example, problems couched in terms of role conflict (119). It may be argued that the school staff comes to agree with the change agent as to what the "real" problems are, but the dynamics of such a shift in perception would then deserve more attention than they have received, since the implications might be profound for change strategies based on the problem-solving model.

The assumption of this approach that a school staff can become more effective problem-solvers through a temporary association with a change agent also reveals a limitation. Insofar as effective group problem-solving results from certain skills, there is evidence that a group can learn these skills with the help of competent change agents (48). But the kind of problem-solving that characterizes self-renewing schools may well hinge not only upon skills, but largely on the staff's attitudes toward evaluating itself and searching for more satisfying solutions. The importance of the attitudinal component is recognized by some problem-solving strategists and included in their plans for working with the school (11, 63, 117). What is not clear, however, is the degree of success that can be expected from attempts to bring about what may be rather basic attitudinal changes during the typically short-term activities set up by a change agent (8).

A counter argument can be offered that the problem-solving model does not require that all changes in attitudes be accomplished during the period of association with the change agent; the model also aims to have the school staff continue its efforts and its learning after the change agent leaves. This argument, however, raises another possible limitation of the problem-solving approach. As it has been described, this strategy cautions change agents not to "give answers" of a substantive nature to the school staffs which they are guiding. That is, the problem-solving model takes care not to create a dependency relationship in which the school staff relies upon the change agent to evaluate the content of its decisions. Writers have noted that this kind of dependency tends to prevent a school from continuing its efforts after the end of the temporary relationship with the outsider (54, 119, 63). Yet, although the problem-solving model seems to avoid building dependency on the change agent as far as content of problems and solutions is concerned, it may not as successfully avoid a dependency on the change agent to sustain new kinds of processes. Thus, the school staff may not feel able to continue to work on its problem-solving processes after the change agent leaves. As noted earlier, descriptions of the after-phase vary from general hopes that the school staff will continue to grow to rather specific plans for structural changes designed to ensure this growth. But the possibility of (unintentionally) creating a dependency relationship between school staff and change agent which militates against independent problem-solving by the staff has scarcely been discussed, much less evaluated.

Finally, the most severe limitation of the problem-solving approach seems to be that, even if all its other possible drawbacks were corrected and it were to work perfectly, it would still not be a practical strategy for a nationwide effort to develop self-renewing schools. The reason is simple: this approach has been built upon a close, though temporary, association between an expert change agent and a school (122). The number of change agents with expertise for training school staffs according to this model cannot possibly become great enough to reach a significant proportion of the schools (54). Some very general proposals have been offered that call for government involvement in training linkage experts (54) and plans to modify the problem-solving model in a way that would utilize personnel from a "trained" school as change agents for new schools are under consideration in at least one project (P. Runkel, Center for the Advanced Study of Educational Administration, personal communication). To date, however, there is no compelling evidence that the problem-solving approach is not limited to a very narrow range of impact.

IV. Example

The problem-solving approach has been the basis for a series of intervention-research projects conducted by the Center for the Advanced Study of Educational Administration (118, 119, 117). Analysis of the reports from these projects demonstrates most of the strengths and weaknesses of this strategy for change.

Basic Rationale

One of the best statements of the ultimate goal of the problem-solving approach is found in a report from CASEA.

> The . . . strategy is to build new norms and procedures that enable the school constantly to monitor the changing community, to compare the results of its own reactions with what it would accept as movement toward its goals, and to establish new forms whenever the movement toward the goals falls below a criterion. This . . . kind of strategy we call flexible organizational problem solving.(119)

The specific objectives of the projects concerned testing the effectiveness of training designed to improve the interpersonal communication skills of school staff members. These objectives arose from a belief that "heightening abilities for organizational problem-solving must commence with new norms for interpersonal openness and helpfulness."(119) Such an emphasis on group relationships is typical of the problem-solving approach (118). The CASEA reports make explicit statements about the focus of its strategy on building feelings of mutual trust among teachers and between teachers and principal. These projects also recognized the importance of the school staff's attitudes toward problem-solving: "In other words, though behavioral skills are very important, the attitudinal correlates of these skills are critical."(118)

It is quite clear also that the CASEA projects contained the problem-solving conceptualization of the school as a system.

> From our point of view, the school is more than simply the total of the individuals' resources and the curriculum materials. The staff as a group has different characteristics from those of its individual members; and, if it is effectively managed, it may be more productive than would be expected from those of its individual resources.(118)

Therefore, although communication skills were stressed in the training period, the objective was not to develop persons, but to change the norms of the staff group and to modify role expectations in ways that would improve group problem-solving. In general, the aim was to increase teacher participation in decision-making and to develop the principal's role as a "convener of organization problem-solving."(119)

Description of Intervention

A complete account of a CASEA intervention in a junior high school is available (119) and can serve as a model of the type of strategy used by this institution.

The two levels of goals which were stated for this intervention illustrate the theoretical relationship in this approach between the future school staff behavior that is hoped for and the immediate activities of the change agent. Thus, the ultimate goals of the project were stated as

> . . . the faculty of our experimental school would establish a continuing series of activities for improving its own communication . . .
>
> . . . participation at faculty meetings as well as the initiation of attempts at influence would spread to more and more members of the faculty . . .
>
> . . . the teachers would show increased initiative in solving problems they were having with those in higher echelons and . . . the initiator of an idea would test his idea more frequently than previously with a lower-echelon subgroup before carrying it to the administration . . .
>
> . . . the staff would invent some new organizational forms within their school or at least borrow some from our training that would help them to confront problems continuously . . .
>
> . . . we wanted the teachers to find some uses for the new forms and methods from the training that would have effects on their classroom instruction.(119)

The specific goals around which the training activities were built were

> . . . to build increased openness and ease of interpersonal communication among the faculty by training them in the skills of paraphrasing,

> describing behavior, describing own feelings, and perception checking . . . .
>
> . . . the staff would develop an increased confidence in the worthwhile outcomes deriving from improved communication . . .
>
> . . . to increase skills of giving information to others about their behaviors and of receiving information about one's own behavior . . .
>
> . . . to stimulate skill development in using a systematic problem-solving procedure and in helping colleagues to enunciate clearly ideas that might develop into practical plans for solving organizational problems.(119)

The association of the change agents and the school staff covered a period of approximately one year. During that time, four training sessions and three data collections occurred. The training sessions consisted of the following activities:

1. A six-day workshop, shortly before the opening of the school year, was held and attended by the entire personnel of the school--administration, teachers and non-professionals. Significant features of this workshop illustrate the rationale of problem-solving training.

   a. Initial practice on structured, game-type activities was designed to develop problem-solving skills. Structured exercises were chosen over an unstructured sensitivity training format on the argument that the structured activities were more apt to lead to staff orientation toward the organization as a whole.

   b. Most of the time was spent on identifying and working on what were perceived to be real problems facing the school, and on using all the resources in the school.

   c. People were rotated in work groups during the sessions so that everyone had the experience of working with everyone else. This was done in the hope of increasing identification with the organization and establishing bases for new kinds of work relationships.

d. New techniques in communication and new organizational forms were demonstrated as part of the training activities.

2. A day-and-a-half training session in December focused on the natural problem-solving groups in the school (i.e., departments) and stimulated thinking about relationships between these groups and the Principal's Advisory Committee.

3. A day-and-a-half training session in February was held for the staff to assess its own progress on solving the problems that had been identified at the start of the year.

4. A one-day T-group session was held late in the year with the Principal's Advisory Committee. This session was requested by that committee.

It is to the credit of this project that a research component was carefully built into the strategy. Questionnaires were administered to the staff near the beginning and near the end of the school year. Data were also collected in interviews with staff members during the fall.

Role of the Change Agent

The report of the project is explicit in stating that during training "the trainers served as facilitators, rarely providing substantive suggestions and never pressing for results."(119) The orientation of the change agent away from giving solutions to problems is characteristic of the problem-solving approach.

Nonetheless, the CASEA project demonstrates the key position which the change agent assumes in this type of strategy. Simply to say that the role is that of a facilitator is not an adequate description and may be somewhat misleading. At least three other aspects of the role are important.

1. The change agents obviously directed the training activities. The content and sequence of exercises were planned apart from the school. One of the weaknesses perceived by the CASEA staff was that these plans were not always extensive enough (119). It is true that the change agents apparently tried to be receptive to unforeseen requests from the staff, as is witnessed by the special session at the end of the year for the Principal's Advisory Committee, but there is an overall impression of a definite teacher-pupil relationship between the outside change agents and the school staff, with the teacher clearly in control.

2. The change agents seem to have been instrumental in the formulation of the problems to be worked on during the training year. Although few details are given, the report states that after a single morning of discussion, the staff settled upon the problems of insufficient role clarity, failure to draw upon staff resources, and low staff involvement and participation at meetings. It simply seems doubtful that a school staff, unassisted, would have formulated their problems in this way. Further information about the CASEA strategy suggests that the leader of a problem-solving endeavor push the group to see the overlap of spontaneously stated problems and to reduce the number of problems to work on.

3. The change agents taught the problem-solving sequence to be used by the staff. The project seems to have had considerable success in persuading the school staff of the usefulness of this sequence.

We returned to this problem-solving sequence many times.

> It became a convenient mnemonic device for staff members. they could easily keep the stages in mind and, in fact, made use of several of them spontaneously during the school year. (119)

Taken together, these aspects of the change agent's role indicate the amount and kind of training that is needed to carry out this strategy. Obviously, the required sophistication and specialized skills are considerable.

Strengths and Weaknesses of Project

In general, the project can be said to have been successful. The report describes organizational changes which occurred in the school during the period of observation.

1. Evidence of improved staff relationships was obtained from informal reports, from questionnaire data, and from lowered turnover rate of teachers. Improvement was described in terms of increased openness between administration and teachers and among teachers.

2. Structural change occurred in the school in the form of increased decision-making powers for the Principal's Advisory Committee and the creation of a new job--a vice-principal who acted as a consultant on interpersonal relations. There was some evidence of possible spread of this new role to other schools in the district.

3. There were several incidents of continuation in learning and using group processes. Small groups in the staff continued to assess their progress during the spring. The principal and a few teachers individually pursued training in group process laboratories. Some teachers reported applying what they had learned in the training sessions in their classrooms.

A weakness which is recognized by the reporters of this project is that the training sessions demanded time after school hours from tired staff members. Another time and personnel demand is implicit--the change agents devoted much of one school year to one school. Although the size of the CASEA project staff is not given, we can assume that a considerable number of expert man-hours went into this strategy. Thus, although the writers hold out hope that in future ventures it may be possible to cut down demands on school staffs by using in-school time for some training, there is no suggested answer to the problem of supplying trainers for a large number of schools.

Even with its commitment to research, the project illustrates the difficulty of gathering empirical evidence on the major hypothesis of the problem-solving approach, i.e., a temporary association with a change agent can materially improve staff problem-solving. The CASEA project conscientiously gathered data over a full year period and was able to show that, in that time, the school staff initiated some organizational changes beyond the training input. The question yet to be answered, however, is what happened afterward, as the special "project" receded into memory. This is a very difficult problem, calling for difficult decisions about research funding, but there is no escape from the fact that it is central to the problem-solving perspective.

The alleged weakness of this model--its lack of attention to the wealth of resources which exist outside of the school--is visible in the CASEA project. Emphasis in training was specifically on the development of resources present in the staff. The report does not mention any aspects of the intervention which were concerned with encouraging staff exploration of outside resources.

Finally, there is a slight indication in this project that there was created in the school staff some feeling of dependency on the change agents as far as problem-solving processes were concerned. Certainly the dependency was not total; it has already been noted that the staff carried out certain group development activities on its own. Yet the CASEA report states as a weakness the fact that the two school staff members who missed the initial summer workshop "were never brought into the training psychologically."(119) They suggest that the change agents should have taken care of this, but one wonders why a school staff, presumably very involved in improving communication and problem-solving, did not deal effectively with the late-comers. It is perhaps a small fault, but it does lend credence to the possibility which was offered earlier, that a kind of "process" dependency can occur.

V. Decision-Making

Writings about the problem-solving approach have not dealt specifically with the topic of decision-making, but the approach indicates the basic problem-solving system to be the accountable unit. There does not seem to be agreement, however, on the definition of the basic system. Some strategies, as in the example given above, seem to be geared to work with the single school as the basic system. Other writers advocate that entire school districts be the target for producing self-renewing systems (94). Thus, although it can be said that the logic of the problem-solving perspective would call for each system or subsystem, whatever its size (district, school, teaching team, etc.), to define its own problems and be held accountable for their solution, there has not been explication of how these subsystems within the institution of schooling would relate to one another.

A few of the common points of emphasis in the problem-solving approach allow speculation about some features of an accountability model that it might produce. Most obviously, a school (and district) might be held accountable in such a model for providing an organizational climate conducive to professional growth in the staff. A corollary to this might well be that individuals would be held accountable as constructive members of groups (team, school staff, advisory committees, etc.).

The literature now available on this type of change strategy offers no reason to suppose that an accountability model based on this perspective would make any significant changes in the formal authority hierarchy of school systems. Problem-solving strategies have paid considerable attention to re-training administrators, both as individuals and as key roles in a system, in order to produce wider participation in decision-making within each existing subsystem and better linkage among subsystems (94, 116). Also, there is often a statement of intentions to encourage the school system to establish new organizational structures that will maintain the new behaviors (94, 119). The description of such structures is rather vague, however, and does not convey the impression that any fundamental change in the line of authority is sought. It might be said that the problem-solving approach suggests that better communication and wider participation in organizational affairs will make the traditional accountability relationships in a school system more satisfying for all concerned.

VI. Potential

As it stands, the problem-solving approach is not a feasible strategy for effecting change in a significant portion of our schools. The reason was stated earlier; there is now no way to get enough of the needed change agents. The strategy is based upon a relatively long and relatively close association between one school or school system and one change agent or team of change agents who are expert teachers of problem-solving processes.

A more subtle set of difficulties has to do with the questions, raised earlier, about how contact between the school and the change agent is initiated, how decisions are made as to what problems the school should work on, and how the school will proceed in its search for solutions. There would have to be much clarification about these steps before the strategy could be advocated with integrity. The basic problem is that, without such clarification, this strategy is potentially the most manipulative of all because its outward emphasis on the client system's own concerns could so easily mask efforts to impose on the schools a new kind of conformity in the formulation and attack of problems. This is not meant to imply that there has been any deception in the use of this type of strategy so far, but any proposal for wide adoption of it should probably describe a problem-solving type of intervention openly as an attempt to teach schools a particular set of procedures to use in coping with their problems, rather than as an attempt to respond with expert help to problems perceived by the schools.

In spite of the drawbacks apparent in any broad use of this strategy as a whole, the work that has been done with the problem-solving approach offers extremely valuable components that should be built into a viable change strategy. Most importantly, it calls attention to adult life in the school. An effective strategy for building self-renewing schools cannot settle for a virtuous concept of a "good" or "competent" teacher who exists in some limbo, awaiting only the proper materials or training. It will have to reckon with teachers and administrators who interact with one another in daily ways that affect their professional performance. The problem-solving perspective suggests that, for starters, a strategy should concern itself with such variables as organizational climate and productive, satisfying group membership. (Admittedly, some of these concepts are elusive as yet, but there is enough evidence that the area should not be ignored.)

An effective strategy would also keep the basic notion that the school (or school system) should select innovations on the basis of what it needs. The extent to which the problem-solving perspective has demonstrated this approach to produce more substantial changes in schools is a major contribution to the development of change strategies.

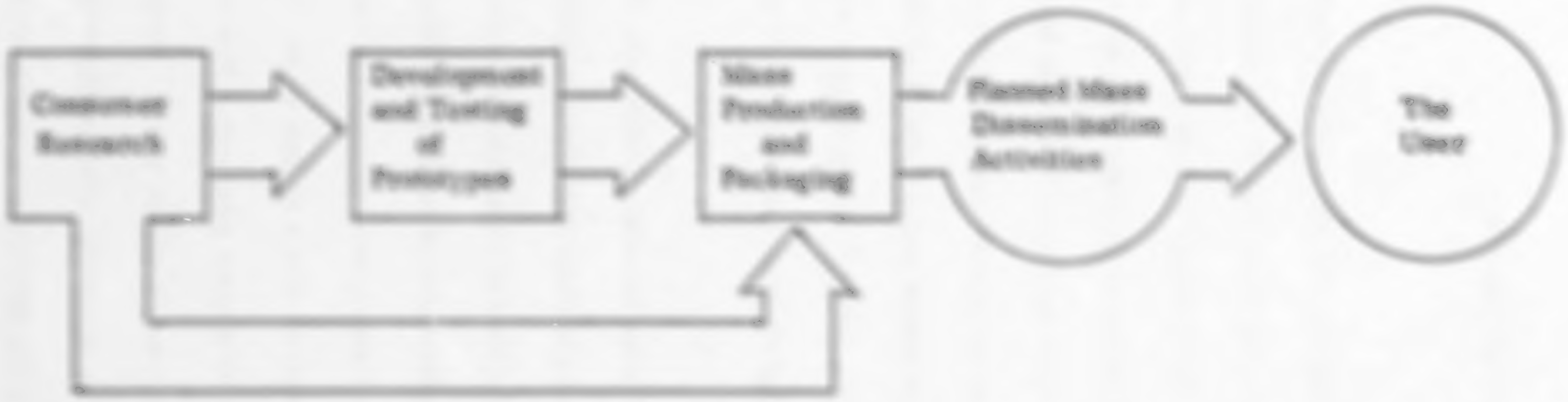
Finally, this perspective offers the clearest focus on future behavior in the schools. Certainly, any strategy for self-renewing schools must draw on concepts from the problem-solving approach that call attention to the need for creating by our presentations the mechanisms for continuing change.

Instructional Materials Improvement

1. Explanation

This so-called strategy focuses on changing the educational system by improvement of instructional materials, largely by those outside the operation of the system, mainly commercial publishers. The strategy has the direct support of the Federal Government for reasons we shall return to examine later and through the National Defense Education Act (NDEA), Title II of the Elementary Secondary Education Act (ESEA), the work of the National Science Foundation (NSF) and some of the work of Regional Education Laboratories funded under Title IV of ESEA. It is interesting to note our preoccupation with the "things" of schooling in this country, particularly since we always have had more instructional materials and equipment in our schools than has any other nation.

The strategy primarily utilizes the change process of research, development, diffusion and adoption put forth by Clark and Guba (23) with one major exception (see Figure 6). That exception is the kind of research employed by commercial publishers of materials and manufacturers of equipment. While Regional Laboratories, NSF and other Government-sponsored agencies conduct basic and applied research, commercial publishers do not always do so. Often, they substitute what could be called consumer or market research. That is, they find out what the market--in this case schools--wants and/or needs. Since they operate for profit, they use such information to determine what products to develop and produce. While this has the strength of being oriented toward the needs of practitioners, it has the equal weakness of depending upon conventional wisdom


Consumer Research
Development and Testing of Prototypes
Mass Production and Packaging
Planned Mass Dissemination Activities
The User

Assumptions:

1. Rational Sequence
2. Planning
3. Division of Labor
4. User Oriented
5. Cost-Benefit

Problems:

1. Based on Conventional Wisdom
2. Over Rationality
   (e.g., inappropriate use)
3. Inadequate Cost-Benefit
   Ratios in terms of ultimate user

FIG. 4. Marketing Perspective

rather than through research findings.

This strategy, as it has been influenced by the Curriculum Reform Movement and through the National Science Foundation, has placed emphasis upon "academic scholarship, on the structure of separate disciplines, on comprehensive packages of instructional materials (often in multi-media form), and on in-service training of teachers."(113) Of late, it has also tended to emphasize the roles and contributions of various minority groups in our culture.

B. Assumptions

Many assumptions underlie the so-called Instructional Materials Improvement strategy. Among them are the following:

1. "The single most important agent of change and tradition on a nationwide basis has been the . . . textbook."(132) Lawrence Bohrson expresses less faith in this strategy by commenting, "Other than the teacher, the major source of instruction is the book."(27)

2. Technological instructional improvements can improve the quality of education on a mass distribution basis (138, 43).

a. Technology can make education more productive; e.g., through CATV bring a teacher into the classroom who is qualified to teach a special lesson direct at appropriate behavior (124). "The number of reinforcers required to build discrimination behavior in the population as a whole is far beyond the capacity of teachers. . . . Yet, relatively simple machines will suffice." In instructional television, events can attain a greater immediacy and affective behavior change.

b. Technology can make education more individual. In computer assisted and programmed instruction, the student is able to follow a program at his own pace. He can continue through a program without the breaks and omissions that occur in teacher assisted instruction in the classroom setting (114).

c. Technology can make access to education more equal. Through such methods as computer assisted instruction, pupils across the country can receive quality instruction without being dependent on their locality.

d. Technology can give instruction a more scientific base. On the basis of mass distribution, money can be made more available for research into the structure and application of knowledge in the most effective and efficient method for instructional purposes. The best minds, scholars, media specialists, and teachers or pedagogical specialists, can be coordinated in the production of instructional materials (120).

5. By maintaining a high level of quality in instructional materials, pupils do not have to depend upon often inadequate teachers for their learning. Learning can be teacher free.

6. Through reliance upon materials and equipment as primary instructional tools, cost-benefit analysis can be utilized as a means of guaranteeing educational accountability.

III. Limitations

The amount of change that actually occurs in a given classroom through the use of instructional materials is dependent on the teacher's ability to effectively utilize the materials. In the Curriculum Reform Movement the in-service education of teachers did not keep pace with the inundation of new materials and media and the results fell far short of those envisioned (38). Teachers need to be trained in how to utilize programmed materials as an instructional tool (120); how to capitalize on the availability of CATV; how to alter their instructional approaches in utilizing new "discovery" type text material; and how to operate the new machines.

Though the purchase of texts and equipment was on the rise in the sixties, the Commission on Instructional Technology reports that much equipment such as motion picture projectors, filmstrip machines, etc., lie idle because teachers were not trained how to operate them or given time to set up the appropriate equipment. Their research indicates that at most five percent of total class hours are filled with technologically assisted equipment, which includes filmstrips, motion pictures, records, television and computer programs (138). Many teachers and administrators looked upon the addition of technology as a "frill," to be utilized after the basic teaching of the 3 R's. CATV is an example of program utilization, often taken as a full dose by all class members at the end of the day.

High cost and inadequate costing techniques are a major cause of the limited impact of much technology on American schools. In CAI, there is a high cost for sophisticated hardware: the computer terminals and central programming base. In programmed instruction ETV and CAI, the developmental cost of software is high. The Education Development Corporation spent $6.5 million on one high school physics course. Children's Television Workshop spent $8 million for 130 one-hour TV programs. Such high development costs demand the need for mass distribution and a wide audience (138).

Education can get in the hands of hucksters and gadgeteers (124). Commercial firms can capitalize on current demand and base their claims for success on quasi-educational research and convincing jargon in pseudo-scientific terms (124). Commercial firms may sell educators hardware not designed for instructional purposes (138).

There is resistance to change within the educational system. Educators tend to project sweeping changes; whereas in reality, teachers and administrators act conservatively, either in a "wait and see" manner, or in fear of being replaced by mechanical robots (i.e., programmed learning in teaching machines and CAI) (97).

There has been an inaccessibility of quality and quantity materials. Television has had limited impact because of the poor quality of most programs and the difficulties in making the few high quality programs readily available for flexible scheduling in the school.

There is resistance to reliance upon materials and equipment as a major instructional strategy because of its "depersonalizing" nature. A 1969 Harris Poll conducted for *Life* indicated that high school students thought CAI and films a passive way to learn and preferred more involvement in class discussions or activities in the community (52).

IV. Example

The launching of Sputnik I in 1957 spawned the curriculum reform movement. In *Strategies for Curriculum Change: Cases from 13 Nations*, the impact of the launching of Sputnik I on the revision of science text materials was reported by Thomas, Sands and Brubaker (132). The astronautical feat of the Russians created a stir among competitive Americans as to why there was such a gap in scientific knowledge between the Russians and Americans. Thomas, et al. cited a study done by Robert C. Nichols on "Career Decisions of Very Able Students" which added fuel to the flames. From 1957-63, the study reported that few National Merit semi-finalists were choosing science and engineering. Nichols surmised that, "It seems apparent that these young people have not had experiences in science that would lead a larger percentage to choose careers in science and engineering." Research into the quality of the education teachers of science received indicated such training was minimal. During World War II and thereafter the teacher shortage forced many unqualified persons into the teaching of science. Elementary teachers had whatever science they themselves were taught in school and possibly one methods course in the teaching of science. Older teachers had not continued formal education in their field and were reliant on text for current additions. Since the teacher is the person who plans the year's work, teaches the lessons, organizes the laboratory, and writes and grades the tests, the teacher is one of the major sources of change in the science curriculum. However, retraining of large numbers of teachers seemed insurmountable. Since "the single most important agent of change and tradition on a nationwide basis has been the science textbook," and textbooks in the past had had limited innovations, support for curriculum change in text material seemed the most effective and least costly way to implement widespread change in the science curriculum. As early as 1953-54 the National Science Foundation began to give financial support to professional organizations. This support increased as desire rose. Such associations as the American Association for Advancement of Science and the American Institute of

Biology were given money to sponsor developmental change in their areas. Groups that studied and organized curricular revision might include a staff of distinguished scientists in each field, research scientists, science educators from universities, teachers, psychologists and occasionally a philosopher. Goodlad, Stoephasius and Klein in 1966 reported on the approaches several groups took (43). Some materials had trial periods and were revised, and others arrived on the market in final form; some came with supplementary materials as filmstrips, lab materials, experiments; a few included suggestions for teacher in-service training in the use of the materials.

Thomas, Sands and Brubaker questioned the amount of change that occurred in the quality of education students obtained in science and found little information. The textbooks indicated an inclusion of newer theories and a more scientific way in thinking about science with emphases on inquiry and a search for empirical evidence rather than memorization of facts. However, enrollment figures in science still indicated a decrease in enrollment. Both Thomas, Sands and Brubaker and Goodlad, Stoephasius and Klein indicated that the obstacle in creating change in the science curriculum was the lack of quality preservice and in-service training of teachers. New teachers need flexible approaches to science that will be valid forty years from now and current teachers need summer institutes (researched by Conant, (25), and noted by Thomas, Sands and Brubaker as the most effective change methods in in-service) or workshops that relate what should be taught with and how it should be taught in the classroom.

V. Decision-Making

In this strategy of curriculum materials improvement, the product developers make the decisions on what will be included in the development of materials.

State adoption agencies or teachers and administrators may be given the option to select from an array of alternative products. The ultimate user, the teacher, is generally accountable for the learning of the students regardless of the quality or quantity of the materials used.

VI. Potential

The power of this strategy lies in the manner in which technological advances are introduced into the macrosystem of knowledge flow (see Figure 7). The impact of the Curriculum Reform Movement indicated that minimal change occurred when improved materials were forced into a resistant or uninformed environment (43). "Continuing self-renewal of the current curriculum reform movement, however, depends upon the pre-service [and in-service] preparation of teachers in the new content and its accompanying pedagogy."(43)

Newly designed instructional materials are not a panacea for all educational ills. Some educators have looked to prepared materials with too much hope for the future, expecting as much of technology in the field of education as in the manufacture of the automobile. Daniel Tanner reminds the field that whereas the "product of industry is the automobile . . . the product of education is a human being."(43) The strategy of research, development, diffusion and adoption requires social intervention to institute effective and lasting change. The U.S. Commission on Instructional Technology foresees that the future of prepared materials lies in their going "beyond any particular medium or device." In this sense, instructional technology is more than a sum of its parts. It is a systematic way of designing, carrying out, and evaluating the total process of learning in terms of specific

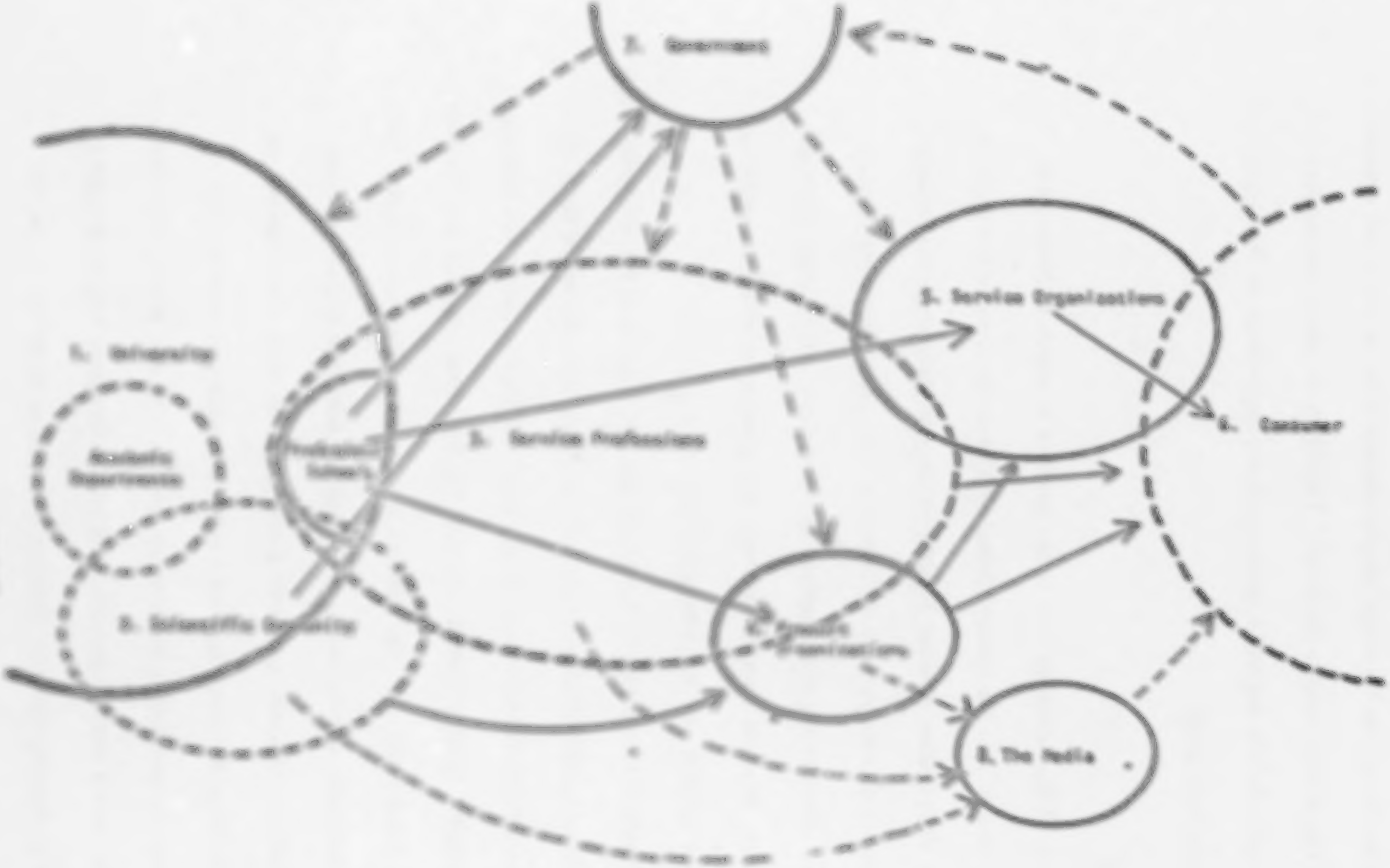

2. Government
1. University
Academic Departments
Professional Schools
3. Service Professions
5. Service Organizations
6. Consumer
9. Scientific Community
4. Product Organizations
8. The Media

Figure 5. An Institutional Framework for Viewing D&U Macrosystem (34, p. 3-3)

objectives, based on research in human learning and communication, and employing a combination of human and nonhuman resources to bring about more effective instruction. The widespread acceptance and application of this broad definition belongs to the future. Ole Sande suggests it is a change from selling prepackaged programs to "truly experimental programs: pharmacies of tested educational objectives."(113)

Two aspects of the technological innovations in education that possess great impact in the future are computer assisted instruction (CAI) and electronic video recording (EVR)(125). Willis Harman suggests when EVR becomes widespread and can be cheaply produced and readily available as recordings and tapes are today, it will make a heavy impact on adolescent culture. He feels that this medium encompasses the two major network influences of youth revolutionary forces throughout the developed world--the rash of music radio stations and commercial TV programming (58). After Syracuse Development Corporation did a study on the use of the computer in the individualizing instruction at Garber High School in Essexville, Michigan, they concluded that individualized instruction on a large scale basis would not be possible without a computer (97). For school systems which are too small to afford the complex computer that is necessary for this type of instruction and organization, regionalized computers can be set up and shared, such as NEEDS (New England Educational Data Systems), which serves 50 districts in six states (97). Mr. Mollor of International Business Machines (IBM) is proud of recent developments of the computer in education but foresees that the ultimate goal of the computer is to become an "extension of man's mind" into realms that are not possible now (90).

SUMMARY

Four existing change strategies have been identified in this section as now being operative in American education. These are:

1. The Research Development and Diffusion Strategy primarily utilized on a macrosystemic level by agencies such as the U. S. Office of Education, regional laboratories and some state education agencies.

2. The Social-Interaction Strategy which is now less an educational change strategy than it is a way of studying educational change; but which suggests configurations to bring about microsystemic or "grass roots" change in education based upon successes in another applied field, agriculture.

3. The Problem-Solving Strategy which depends upon the local school or system to initiate its own need for change and which has as its ultimate objective the self-renewing capability of the members of the local school. At present, there seem not to be enough people trained to implement such a strategy nationwide.

4. The Instructional Materials Improvement Strategy which has given impetus both to the implementation of the R., D & D Strategy through direct Federal Government intervention and through the channeling of government monies to private industry to develop materials and equipment for education. As a strategy, it has both less force and less success than the other strategies mentioned; yet, it has had significant financial support.

In American education, we have spent countless dollars in segmental change efforts. We have developed and paid for outstanding new materials, methniques and equipment. Yet, little of this effort has found its way into the schools in such a way as to make any significant difference (41, 127).[8]

Each of the four strategies mentioned in this section has had some success. Each has more potential. Much research has been conducted on these strategies both in education and outside of education. Such research has given us valuable data on how we might change American education, if we only were to commit ourselves to the task.

Rather than continuing our segmental efforts, it is perhaps time for us to refocus our resources and our energies on the application of such social engineering strategies to the accomplishment of our ultimate goal: quality education and the equality of educational opportunity for all of our citizens.

As we consider the application of strategies to the various levels and various segments of American education, we will have to keep in mind those factors which inhibit educational change. Serious questions will have to be raised and answered. For example, it seems fair to suggest that an R, D & D strategy is appropriate for agencies such as the U. S. Office of Education or the new National Institute of Education (NIE). With the adoption of such a strategy, how do such agencies overcome the tendency toward bureaucratic inertia or toward vested interests in and among its various subdivisions?

It also seems fair to suggest that a social interaction strategy is appropriate for intermediate educational agencies. With the adoption of such a strategy, where can people be found and how can they be trained or retrained to fill the many leadership or change agent positions which will be needed?

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[8] For evidence of the fact that schools have changed little to date, see Goodlad, John I., M. Frances Klein and Associates. Behind the Classroom Door. Worthington, Ohio: Charles A. Jones Publishing Co., 1970; and Silberman, Charles. Crisis in the Classroom: The Remaking of American Education. New York: Random House, 1970.

Further, it seems fair to suggest that a problem-solving strategy is appropriate for local schools. But how can the time necessary for adequate problem-solving be financed so that teachers can actually be engaged in the activity? And from where will the necessary leadership come?

With all of these strategies we will need to answer such questions as how can we finance them? Who makes what decisions? What values govern our behaviors and our planning?

Finally, we will need to be aware that we are not limited to those strategies which we now understand to some degree. There are new, emerging strategies which hold some promise for us. We shall examine a number of these in our next section.

EMERGING EDUCATIONAL CHANGE STRATEGIES

Overview

A random look at contemporary educational literature reveals much terminology that was not present in this same literature five to seven years ago. Planning-programming-budgeting systems (PPBS), guaranteed performance contracting, teacher power, home television cassette learning, free schools, program evaluation review technique (PERT), student power, self-help, on-site teacher education centers, store front schools, integrated day, franchise schools, experimental networks, systems planning, voucher plans, community action, internship and leagues of schools--all are examples of this new terminology. All of these terms, as various as they seem, have at least two things in common. First, by design or not, they have, in one way or another, resulted from the Federal intervention in education of the mid-sixties. Second, they all, at least in part, hold promise for bringing about change in American education.

None of the terms set out above represents a change strategy. Collectively, however, they give hints as to how education may be changing in the years to come. The task is to get ahead of such ideas and to mold those ideas which are viable into positive strategies which will accomplish the one goal to which we do subscribe: quality education and the equality of educational opportunity for *all* of our citizens.

The newer and emerging ideas related to changing American education can be arbitrarily grouped into a number of broad categories. For the purposes of this report and to help clarify the somewhat confused picture that now exists, the following categories have been set forth:

1. Political strategies
2. Personnel retraining
3. Systems planning
4. Experimental centers
5. Alternatives to public education
6. More communications

Each of these "potential" change strategies will be examined somewhat in depth in this section.

Political Strategies

I. Explanation

Prior to the sixties, there were few in America who thought in terms of the politics of education. There was a notion abroad that political matters were well defined for public education. That is, there was local control of education, there was state responsibility for education and there was federal concern for education (62).

John Orr discusses our awakening to the political realities of American education as follows:

> Until a few years ago . . . . education seemed more closely associated with laboratory experimentalism than with political hustling. And Americans tended to believe that somehow they had developed a science of education which could remain aloof from issues that divided national opinion. During the past six years, however, a remarkable number of authors have examined the political processes within which school policy is formed and, also, the relation of education decision-makers to other community elites. In part, this new political awareness among educators simply represents a coming-of-age, a rounding out of educational interests. But more important, educators are increasingly aware that something is happening politically in America that whole educational structure rests on an unstable political foundation (104).

The fact is public education has always been "political" in the sense that, as in the other governmental agencies, political processes are utilized to formulate public policy. School board members and state and county school administrators are often elected sub-units of city or county government. As with all political systems there are ways in which political demands and supports from the population are formulated, aggregated and articulated through individuals, special interest groups, nonassociational groups and/or media to those governmental sub-units responsible for the formulation of public educational policy. More and more, anomic or spontaneous and often violent means are used to directly or indirectly present such demands. These _are_ political processes and there is an ever-growing body of research which is investigating them as such.[9]

At least in part, the politicization of American education has grown out of an impatience with those factors which have impeded educational improvement: vested interests, value dilemmas, bureaucratization, and lack of financial resources.

Traditionally, public education has received support from an alliance of minorities, the poor, the middle class, intellectuals and other education-minded people who have viewed universal public education as a means of providing equality of opportunity, particularly economic opportunity, to all. As early as the fifties, however, there were those who viewed universal public edu-

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Political systems analysis emerged as a field of study during the mid-sixties. See for example: Easton, David. _A Framework for Political Analysis._ Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1965; Almond, Gabriel A. and G. Bingham Powell, Jr. _Comparative Politics: A Developmental Approach._ Boston: Little Brown and Co., 1966; Mitchell, William C. _Sociological Analysis and Politics: The Theories of Talcott Parsons._ Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1967. At the University of California, Los Angeles, a series of doctoral dissertations have utilized political systems analysis in the study of the politics of education under the leadership of Professor Jay D. Scribner. Some of these are: Hamitz, Wallace I. "A Study of Demands Upon the School Boards in a Unified and an Independent Junior College District," 1967; Peetz, Walter. "The Effect of Population Changes Upon the Demands Made by the Public and Junior College Trustees," 1967; Tye, Kenneth A. "A Conceptual System for Political Analysis: Public Demands and School Board Decisions," 1968; Kane, Owen. "Processing Environmental Demands: A Case Study for Decentralization," 1971.

cation, particularly as backed by the "liberal coalition" mentioned above, as subversive to their own vested interests or to those values to which they felt the nation should subscribe. The book The Ax-Grinders, brilliantly documents the emergence of the many "right-wing" groups which began to politically attack public education during the fifties and early sixties (107).

The 1954 U.S. Supreme Court Decision--Brown vs. Board of Education of Topeka--charged the nation with the responsibility of desegregating its schools. The Civil Rights Act of 1964 reinforced and put more teeth into this responsibility.

For the moment we will not deal with the success or failure of our efforts as a nation to accomplish desegregation except to say that our apparent lack of success in eighteen years, 1954 to 1972, has all but shattered that former alliance of minorities, poor, middle class and intellectuals who collectively supported the advancement of public education as it has existed. On the one hand, many members of minorities and poor communities, with some support from white "liberals," have come to the position that, in the face of little or imperceptible progress in receiving equal opportunity through "compensatory" programs, they must have political power in education as well as in other walks of life. On the other hand, the so-called middle class has reacted to protect its own interests by turning to political power as its vehicle. The result of these great social realignments have led us to consider such terms as polarization and pluralism. And while these terms tend to focus on value questions, they have political implications as well.

At the center of this disturbing situation is the problem of how to finance the schools. Speaking of our existing means, Orr says:

> Although a peculiar combination of resources has been utilized to sustain the system of public schools, an out-and-out sadist could not have shaped a more divisive financial mechanism. In most areas, schools depend heavily on the property tax. Yet, the property tax base creates dramatic inequalities of educational opportunity, and pits the city against the suburb, the rich against the poor, the black against the white, and even the state against its constituent municipalities . . . . and it stands as a major barrier against the development of regional cooperative projects (35c).

Finally, our school systems have grown so large, particularly in our urban centers, that massive bureaucracies have had to be created to administer them. Such bureaucracies have tended to become rigid and almost totally unresponsive to the demands of the citizens they serve.[13] Such a condition has led many persons and groups to resort to other than "normal" democratic or political means to get their demands into educational operation. Both recall elections of board members and violence on campuses have increased.

Our frustrations with our institutions, our deepening value differences, our apparent lack of ability to use "normal" procedures to achieve our goals of equality of opportunity and our inadequate financial structures have led us as a people to employ newer strategies for change, at least newer in the educational context. In many cases, these have been political strategies.

The heart of the political processes, as the political scientists tell us, are three key concepts: conflict, power, and policy formation. While these concepts are interrelated, an examination of each can be helpful in placing emerging political change strategies into some kind of educational perspective.

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[13] In his own doctoral study, this writer found that 75 percent of all demands made upon the Los Angeles City Board of Education never appeared again as incorporated in some form of authoritative decision, policy or statement by the Board. Somehow, they become "lost" in the system. See footnote 9.

1. *Conflict serves as the basis for at least two emerging educational change strategies.* On the one hand, there are those who, largely because of their frustrations with the "system," call for anomic or violent acts which they assume will result in the desired change, whatever that might be. Strikes, school burnings, marches, sit-ins and riots are all seen as ways of forcing those in authority to make whatever changes are desired. While it can be said that such means are destructive and that they often create dangerous counter-reactive attitudes against needed change, it must be admitted that much educational change has occurred as a result of such acts during the past decade.

A second educational change strategy, and with a substantial research base, sees conflict as both inevitable and desirable. Most educators are not at all attuned to such a point of view. Typically, school people tend to suppress or avoid conflict assuming that it will go away. Often, such suppression leads to even more destructive confrontations at a later date. Those who see conflict as inevitable and desirable suggest that there is a need for "task groups" or cadres of conflict managers who can move into educational settings as objective, third parties to assist those who are in conflict to come to some type of compromise on implementing needed changes.[11] This is, of course, very similar to negotiation and arbitration models used by management and labor.

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[11] Mark Chesler at the University of Michigan has formed an agency to do just this. In a conversation with him in 1970, he indicated that his group had successfully mediated conflicts in at least three educational institutions.

3. "Power" has become both a political catchword and a political reality in American education. In the 1971 NSSE Yearbook, Ole Sand characterized student power, community power and teacher power. Of student power he said

> College students were the first dissenters, but dissension quickly spread to lower levels of education. A survey made recently by the National Association of Secondary School Principals revealed that 59 percent of the respondents had already experienced some form of student protest and 56 percent of the junior highs polled had seen students on the march. Dissatisfaction with the school program, including teachers, curriculum, scheduling, homework, grading, and testing, accounted for student unrest in 45 percent of the schools responding. Students seemed to be asking for learning based on their own living—for a curriculum that confronted the facts of war, racism, crime, and urban decay and help them to find remedies for these societal ills as well as answers to the urgent personal questions, Who am I? Where am I going?
>
> Black students took the protest route, to demonstrate that they no longer intended to remain without pride and ignorant of their own identity and culture. The justice of their complaints hit home in many schools during the sixties. Courses in soul music and Swahili, Black history, and Black culture began to multiply. Textbook publishers rushed to the presses with new books designed to make amends for years of neglect of the contributions of Black people to American history. It is obvious that student power cannot be ignored, laughed out of existence, or swept under the rug. In many instances, student power has been a restraining force to change when it led to violence. However, student power, along with community and teacher power, is potentially among the strongest supporting forces for really making change happen (110).

Of community power, Sand said

> Parent power has been burgeoning, too, in the late sixties, and from an unexpected quarter—the ghetto. Poverty area and minority group parents were finally perceiving the dismal statistical truth that the longer their children stayed in school, the farther behind they fell. These parents began seeking the same control over their children's education that they believed suburban parents exercised. Decentralization and community control became their rallying cries.
>
> Urban parents demanded—and in some instances got—control of their schools. In some cases, community control became a bat-

> early conceived end in itself. But in others it was a step toward a cooperative restructuring that involved all segments of the school community. Experiments in widespread community participation in schools have not always been successful, as we have seen in Brooklyn's Ocean Hill-Brownsville District. The Morgan Community School and the Anacostia Community Demonstration District, both in Washington, D.C., have on the other hand, been able to make headway in involving the community in the schools. Each has a community board to determine school policy. Boston and Chicago have also begun to experiment with citizen participation and the utilization of external consultants (115).

And of teacher power, Saxe noted:

> Teachers have begun to use political power. Teacher unions, almost unheard of before the early sixties, have become commonplace. Teachers have gained visibility and bargaining power. As a result of this newly found muscle, salaries have risen and working conditions have improved. The power of teachers in negotiation, however, has hardly reached several important areas . . . . (115).

And in that last line rests a significant problem for teacher power. In demanding only salaries and working conditions, in being unrealistic about such things as differentiated staffing, and in not focusing, at least in part, on improving the curriculum, teacher power could end up putting teachers out of business. And, yes, it is a change strategy!

Finally, in quoting Mario Fantini, Saxe gives a summary of the potential for the various power strategies:

> . . . The participants who lead reform in the 70's will be those closest to the action—teachers, parents and students. Participation of these three publics in the governance of urban schools carries the potential for triggering change in substance and personnel. If all that were to happen under the new participation movement should be a shift in control, so that a new group controlled the schools as an end in itself, the educational institution would remain unaltered. The hope, however, is that those seeking control will use their political energy to set in motion the search

for institutional renewal at the local school level where it counts (115).[12]

5. The balance of power in school systems, as in all political systems, results from control of public policy and control of the vital resources such as jobs, funds, social status, and expertise. Competition among groups for the right to make policy and for the resources of power generally makes for a dynamic, pluralistic system, whereas monopolies generally produce a static system. Over a period of time professionals at the state level as in school systems, particularly in urban centers, have used their expertise to secure greater control over jobs and funds. In so doing, they have expanded their control over public education policy so that others have largely been excluded from policy making.[13]

Three potentially powerful strategies having to do with new configurations of educational policy formulation are emerging. These are (a) new Federal-state-local relationships, (b) metropolitan planning, and (c) decentralization.

There can be no doubt that the Federal enabling legislation of the [illegible] upon the balance of power in American education. Much of this legislation sent funds directly from the Federal level to the localities, thus in essence circumventing the states. Community action and community power were first encouraged and then harnessed. To be sure, there was graft and some radical elements gained control of power. However, the fact remains that a new relationship was formed and, in the main, it created significant change which can never now be reversed. This is why many sociologists, economists and even knowledgeable educators feel that "revenue sharing" between Federal and state governments should never be singularly the Federal policy. Such a policy would close one vital and productive option in bringing about educational change.

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[12] Quote from the unpublished manuscript by Mario D. Fantini, which resulted in the The Reform of Urban Schools. National Education, 1970.

[13] For a more detailed discussion see Gittell, Marilyn. "The Balance of Power and the Community School" in Levin, Henry M. (ed.), Community Control of Schools. Washington, D.C.: The Brookings Institution, 1970; Gittell, Marilyn and T. Edward Hollander. Six Urban School Districts: A Comparative Study of Institutional Response. New York: Praeger Press, 1968; Schrag, Peter. "Boston: Education's Last Stand." Saturday Review (May 21, 1966), pp. 56-58.

Havighurst and Cunningham have proposed what they call "Federated Urban School Systems." (103) Such systems, organized across urban-suburban lines, would at once deal with many of the problems which now plague American education and American society: integration and the equalization of fiscal resources (55). The common notion is that only the cities would benefit. However, central city-suburban comparisons do exist which indicate that suburbs would profit from metropolitan fiscal arrangements in some standard metropolitan areas (1).

There are serious obstacles to the implementation of such a model in metropolitan areas. First, as Norton Long has said, "The suburb is the sanctuary to ensure separation and escape" (78). People seek housing, work, and social and education settings in which others like themselves are in the majority (103). Second, metropolitan cooperation would require some redistribution of fiscal resources. Finally, consolidation of multiple school districts presents legal problems and problems of vested interest on the part of school administrators who would view themselves as losing power.

Even with such obstacles, however, there are certain achievements which make metropolitan federation a desirable strategy for improving education

In the face of these inducements to federation is the obvious disadvantageousness of the decentralization strategy from the perspective of Black and other community control leaders. Despite the power which decentralization might give Black power enthusiasts to govern institutions in their own neighborhoods, the fact remains that their primary objective is the equality within the broader society, not just their own neighborhoods. To achieve such equality requires participation with whites in institutions. Although Black power advocates may continue to extoll the virtues of community control, progressive thinkers among them surely will be led to seek an institutional rapprochement with "Whites." Federated urban school systems could provide such an arrangement.

Downtown and ghetto business leaders, and absentee operators, retailers, and service establishment entrepreneurs are undoubtedly having second thoughts about the profits of dealing with captive ghetto markets. Many of them suffered great losses in the civil disorders which plagued our cities during the past decade. The prospects of community control are necessarily threatening to these people, for they envision the possibility of some neighborhoods mobilized for violence against an alien business establishment. Efforts to defuse the decentralization movement by working through the schools as other "establishments" could be expected to appeal to them.

Both central city politicians and suburban civic and government leaders probably can be expected to become advocates of metropolitan government in the near future. Some central city leaders presently view community control as a threat to the smooth functioning of their past organizations. . . . In the long range, however, community control is not the biggest threat to as threatening to suburbanites as it is to central city political leaders. Demographers recently have become quite explicit about the exact time that many of our biggest cities will be dominated by the poor and the Black. Prospects of the control of central services in those cities passing from white hands is threatening to suburbanites for whom the city is the source of their livelihood. Many of them, therefore, can be expected to support various forms of metropolitan government as means of retaining predominantly white control.

Finally, there are many conscientious laymen, as well as leaders in public education and other areas, who are aware of the real and educational benefits to be achieved by reorganizing urban school systems on a federated basis. Many

> of these pressures already have acted in this direction. Metropolitan school organization is already in effect in Nashville-Davidson County, Tennessee; Dade County, Florida; and Fayette County, Kentucky. Preliminary steps in the same direction have also been taken in [illegible] [illegible], Boston (METCO), Columbus, Ohio; Louisville, St. Louis and Kansas City. Further developments probably are to be expected in these and other areas. Moreover, it is not unlikely that the processes of consolidation will receive additional encouragement from state and federal planners who are cognizant of the need for comprehensive, coordinated approaches to urban problems ([illegible]).

Community control and decentralization are relatively new terms on the American educational scene. Both arise from our inherent distrust in this nation of bigness, be it business or government. More importantly, it comes from our knowledge that bureaucratic school systems have been less than responsive to particular local needs. Major cities--New York, Cleveland, Boston, Los Angeles, Newark, Detroit, Washington, D.C., Philadelphia and Chicago--have all implemented phases of decentralization. Others are following as will others soon.

There are varying degrees of support for decentralization. A National Advisory Commission on Civil Rights Report stated the case as follows:

> The school systems of our largest cities have become highly centralized, with decision-making responsibility for a large and dispersed population concentrated in a central board of education. While this process has produced substantial benefits--city-wide tax base and more efficient administration--it has sometimes resulted in serious problems in terms of accountability and community participation. What is needed now is to preserve the worthwhile features present in the existing system while eliminating the liabilities that are unnecessary. The objective must be to make public education more relevant and responsive to the community, and to increase support for it in the home ([illegible]).

For the minorities, Black, Chicano and recently the [illegible] in the

Therefore, the simple answer is that they want to control their own life styles with appropriate institutional support. They want sovereignty over their own lives and destinies. The school, as a socializing institution, looms high on the list of those who believe in community control.

For some, including bicultural educators, decentralization implies moving decision making and ethical accountability downward to that unit most directly involved in the actual education of children and youth, the local school. Arising from such decentralization, it is hoped, will be a variety of means and paths for reaching the common goals of education. [illegible] [illegible] clearly states this position when he says:

> [illegible]

Regardless of which combinations of political change strategies are used in the future, the fact is such strategies will be used. There will be power struggles, conflict will occur, and policy making will be maintained at varying levels in the system. The position for us as a nation is to see that we use such strategies appropriately to reach our educational goal of quality education and the equality of educational opportunity for *all* of our citizens.

D. *Innovations*

[illegible] innovations undergird the [illegible] and use of [illegible] strategy for educational improvement. These are:

1. Education can be viewed as a political system in that elected or appointed officials (e.g., school board members) make public policy and authoritatively allocate values for the general populace. Further, all of the processes inherent in other political systems also reside in education. The wants and interests of the public are brought to the subsystem as demands and supports, through political means: interest groups, lobbies, anomic groups. They are dealt with through processes such as making rules or regulations, adjudicating or taking action. Resources are allocated.

2. Supreme Court Decisions and Federal legislation, particularly having to do with desegregation have necessitated the design and use of political strategies to improve American education.

3. Conflict, power and policy formation are the central processes of politics. It will be in these three areas where politics will be effective in improving American education.

4. Decision-making is at the core of political improvement strategies. Who decides what--or is accountable for what--is the critical question to which we have not given adequate attention as we have proceeded to realign policy making roles in American education.

III. Limitations

There are many limitations to applying political strategies to education. The use of teacher power and community power are good examples. Further, the move toward decentralization, without a serious focus upon the real issue--

improved instruction--has serious limitations. We shall briefly examine each of these issues for their limitations.

Sand (113) has pointed out that teachers, indeed, do have power and that they have, indeed, begun to use it. He also has pointed out that such power has been used, by-and-large, for obtaining higher salaries, benefits, and so forth. Such has been necessary. But the limitation of such a strategy, utilizing strikes, sanctions or whatever, is that it has not as yet focused upon the real issue, that which would have broad-based support, improvement of instruction. Further, the utilization of power for economic benefits in a time of economic limitations could ultimately do damage both to education and to the goals of organized teachers themselves.

For example, it is unrealistic to assume that there should be one credentialed teacher for each 25 children in a self-contained classroom at each school in America and at $15,000-$25,000 per annum. Yet, such an issue seems to be the central thrust of the major professional associations, The American Federation of Teachers (AFT) and the National Education Association (NEA). Such organizations and their local affiliates would do well to use their new found power to support, not only their own welfare, but also instructional improvement and the monitoring of their own ranks with the goals of (a) raising standards, (b) building some type of internship system as with the medical profession, (c) retraining themselves, and (d) removing incompetency from their ranks.

Community power, with all of its value and its potential for making schools "self-renewing" institutions, also runs some risks if it is carried to its ultimate extreme, segregated schools and society. There is a danger that "We shall end up with only Negro teachers in Negro schools, only Negro police in Negro neighborhoods, only Negro social workers handling Negro clients (77). Somehow, we must maintain our national strength. This means common purpose, respect for others, opportunity for all, and encouragement of cultural plurality. Community power, misused, may not hold that promise. On the other hand, discrimination, suppression of minority rights and de jure segregation does not hold any promise. The fact is, and no "gilding" avoids the issue, minorities are discriminated against in education as well as in housing, jobs, and so forth. They turn to community power as a strategy, as they have every right to, since they are frustrated otherwise. The limitations of the strategy will be borne by those in the majority and/or those who set national policy. The problems of discrimination, by-and-large, are still in the "White Ghettos" of America.

The move to decentralize decision-making in American education has much promise. It also has major problems. Most important, it runs the risk of being the result of "tinkering." One principal in the Los Angeles City Schools, for example, reported that in the District presentation of its plan of decentralization it took eight organizational charts before the local school appeared. The point is, clearly, we can spend our time reorganizing while we avoid the real issue which is getting decision-making at that level where it really counts, as close as possible to the learner. Or we can "struggle for power" while avoiding the hard task, improvement.

IV. Example

There are numerous examples of political change strategies in education. One could examine Federal intervention of the past decade or so. Teacher militancy, campus unrest or community control movements could also serve as examples. Perhaps the most comprehensive political strategy being employed today is that broadly referred to as decentralization. It seemingly has the most broad based support, it has a good deal of promise as a strategy, and it has no exact form, being interpreted differently from district to district.

One of the earliest, most comprehensive and most famous decentralization plans is that of New York City. We shall examine it briefly here. In so doing, we shall rely heavily upon the works of Anthony Baratta (5) and David Rogers (111).

On March 30, 1967, the New York State Legislature passed Senate Act 4622. It provided the rationale for school decentralization and directed the Mayor of the City of New York to propose a plan for the decentralization of the public school system:

> Increased community awareness and participation in the educational process is essential to the furtherance of educational innovation and excellence in the public school system within the city of New York. The legislature hereby finds and declares that the creation of educational policy units within the city school district of New York for the formulation of educational policy for the public schools within such districts will afford members of the community an opportunity to take a more active and meaningful role in the development of educational policy closely related to the diverse needs and aspirations of the community.[14]

On April 19, 1967, the Board of Education of New York City adopted the "Decentralization Statement of Policy:"

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[14] New York State Senate Act 4622, March 30, 1967.

> All members of our Board are committed to the principle of decentralization of operations. In a city as large and varied as New York, we believe it is essential to have as much flexibility and authority at the local level as is consistent with our need for centralized standards....
>
> Now the Board proposes to further facilitate decentralization in the districts, in two major directions.
>
> The first--set forth in the policy statement--confers increased responsibilities, especially in administrative matters, on the district superintendents and principals and the local school boards.
>
> The second embodies the Superintendent's recommendations, requested and approved by the Board, regarding various demonstration projects that would permit experimentation to determine more effective methods for achieving greater community involvement with different types and sizes of districts (12).

It was this statement which set the stage for the establishment of three experimental decentralized districts. The Ocean Hill-Brownsville Demonstration District in Brooklyn was one of these.

On April 30, 1967, Mayor John Lindsay appointed a prestigious panel to draw up a decentralization plan which would be subsequently forwarded to the State Legislature before December 1 of that year. This panel was headed by McGeorge Bundy, President of the Ford Foundation. The Bundy Report was completed and transmitted to Mayor Lindsay on November 9, 1967. In the transmittal letter the following principles were expressed:

> The first premise of this report is that the test of a school is what it does for the children in it. Decentralization is not attractive to us merely as an end in itself; if we believed that a tightly centralized school system could work well in New York today, we would favor it. Nor is decentralization to be judged, in our view, primarily by what it does or does not do for the state of mind, still less the "power" of various interested parties. We have met men and women in every interested group whose spoken or unspoken center of concern

> was with their own power--teaching power, parent power, supervisory power, community power, Board power. We believe in the instrumental value of all these forms of power--but in the final value of none. We think each of them has to be judged, in the end, by what it does for the education of public school students (108).

Subsequent events, many centered around the Ocean Hill-Brownsville Demonstration District, were a tangle of actions and reactions on the part of neighborhood school groups, teacher groups, city and school officials, civil rights groups, and other groups. The politics of education had, in fact, emerged as the major issue surrounding education reform.

By the end of the first two months of school in 1968, the United Federation of Teachers had been on strike three times.

> The primary issue set forth by the Governing Board of the Ocean Hill-Brownsville Demonstration Decentralized District in Brooklyn was its demand for community power and control of the schools. A key proposition of this control was the Governing Board's demand to fire or transfer out of the district teachers whom they judged incompetent or decentralization saboteurs. They demonstrated their power, practicing the principle of accountability, by the May 9, 1968 action of ousting ten teachers from teaching assignments. The United Federation of Teachers struck because it judged the ouster of the ten teachers as a violation of due process of teachers' rights, and an attempt to break the teachers' union. As the crisis intensified, other issues and charges began to emerge including those of anti-Semitism, white racism and Black extremism (5).

The decentralization movement has struggled along in New York City with some successes and many more failures. There are still power struggles and the central bureaucracy is still sluggish. However, there is more community involvement. By and large, there has been little improvement in the education of the student body of the New York City Schools. The fact is, decentralization, by itself, is not the answer. We need to develop related strategies which will cause decentralization to fulfill its potential. Many of these have already been reviewed in this report: social interaction; research; development; diffusion; problem-solving; and curriculum materials improvement. Others will likewise be discussed. And our schools are not the only institutions which need revitalization. Rogers states the case succinctly, as follows:

> The failure of the schools is also conditioned by the failure of many other urban institutions. Restructuring of the school system must therefore be part of a total urban development strategy that involves the simultaneous revitalization and reform of transportation, recreation, cultural facilities, housing, and the economies of subcommunities throughout the city. Interagency planning is a necessity and must be assisted by the private sector. The proposed solutions are complex, but so are the problems.
>
> The nation clearly must change its priorities and allocate more resources to revitalizing our moribund schools. Otherwise, the schools will surely fail, and with them our entire social order (111).

V. Decision-Making

The central issue involved in all so-called "political change strategies" is who shall make what decisions. Community control advocates believe that they should be able to decide on who is or who is not employed to teach. Teachers feel, likewise, that they should make such decisions. In actuality, school administrators do make them. And so it goes, through the establishment of policy, allocating fiscal resources, student body composition, what is taught, how it is taught, and so forth.

One way to overcome the negative aspects of political strategies is to encourage research into educational decision-making. Models of decision-making for different educational contexts need to be developed, tested and evaluated. One such model is that described by Tye (134) and based upon an earlier one developed by Goodlad and Richter (42). In that model, decision-making roles are defined as follows:

(1) Sanctioning bodies, the public and their legislatures, are responsible and accountable for clarifying societal values, for passing laws which lead to the implementation of these values in education and in other walks of life, and for providing the necessary resources for such implementation. Such sanctioning bodies should not prescribe curriculum content nor should they legislate specific courses.

(2) Controlling agencies, school boards, are responsible and accountable for the clear statement of policies. This includes the statement of educational aims and guidelines for implementation. Such statements should be derived for societal values. They should not interfere with more specific institutional decisions which are the responsibility of the professional-technical staff.

(3) The professional-technical staff of the school system is responsible and accountable for the statement of institutional objectives, the allocation of human and financial resources, and the design of procedures for monitoring the accomplishment of objectives. Such a staff should not attempt to make instructional decisions.

(4) Teachers are responsible and accountable for all instructional decisions. This includes those things which fall under their "span of control:" (a) a sense of direction (objectives), (b) management of self in the instructional setting, (c) an understanding of the students with whom they work, (d) a knowledge of the content of instruction, and (e) an ability to employ learning resources. Teachers are accountable, insofar as they have the training and resources to make such decisions.

Such a model, alone, does not speak to community involvement or the size of decision-making units. There are procedures which can be utilized by school districts to involve the community in decision-making without making it a matter of politics. The needs assessment procedures designed by the Center for the Study of Evaluation at UCLA and now used extensively in California and other parts of the country are an example of parents and community members being involved in the determination of the goals of schooling.

One potentially productive way to view the decentralization-centralization issue as it relates to decision-making is to establish criteria for such decision-making. In this case, the question "Is the school district centralized or decentralized?" is not a useful one. Rather, the focus is upon "What decisions should be centralized and what decisions should be decentralized?" Example criteria are listed as follows (65):

Decentralization Criteria

Individual solutions needed. (e. g., staffing pattern at an individual school.)

Decisions needed frequently. (e. g., how best to spend funds allocated within school.)

Decisions needed quickly. (e. g., to suspend a student for misbehavior.)

Centralization Criteria

A uniform solution is required. (e. g., teacher salary schedule, placement on teacher salary schedule, screening candidate for legal qualifications, law demands a uniform solution.

Negative consequences of decision go far beyond the place where the decision was made. (e. g., deciding not to pay for a service that was traditionally paid for.)

Decisions based on information which is all available at a central location. (e. g., where to place a new school.)

Unless we establish criteria for decision-making, define decision-making roles, test models of decision-making and involve appropriately all concerned with schooling, we will find ourselves enmeshed in political struggles.

Better our energies are collectively spent on improving education than in struggling with each other.

VI. Potential

We are, without a doubt, in the political decade of education. We may or may not come through that decade with an educational system which can serve the needs of our nation. There are several political aspects which do hold promise, however.

"Grass roots" involvement, as represented in decentralization, certainly is promising. If our institutions are to remain vital and self-renewing, people will need to be involved and active. It is possible that such involvement in schooling will lead to models which can be utilized in other institutions as well. Further, such involvement could well lead to the establishment of alternative or pluralistic models of schooling which would have both the effect of making our educational system more relevant and of strengthening our society.

Finally, if we move to shift our basic policy making strategies through metropolitan arrangements and through strengthened Federal-local relationships, eventually we may be able to solve many of our social problems, including the provision of quality education and equality of educational opportunity.

Personnel Training

I. Explanation

Education is a human endeavor. Financially, well over seventy-five percent of all operating funds (exclusive of capital outlay) go to the payment of salaries and benefits for people. Further, and despite all efforts to make instruction "teacher free," the cornerstone of schooling is ultimately the kind and quality of interactions among students and adults in the schools.

The implications of these facts are extremely significant for those interested in improving education. Teachers and school administrators tend to come from predominantly lower middle class origins with a provincial, parochial outlook that limits their capacity to adapt to the rapid changes occurring in our society (111). This is further complicated by the fact that for the first time in modern history the nation is faced with a surplus of teachers. A wider variety of social types need to be recruited into education (i. e., members of ethnic and racial minorities, the young, the change oriented, the socially conscious).

One potential strategy directed at changing the composition of the teaching force in the schools of the nation is that of early retirement.

Retirement systems, in general, encourage teachers to accumulate as many years of service as possible. Further, since retirement income is most often based upon the highest salaries earned during active years plus years of service, the motivation to stay active as long as possible is extremely great.

Most states have retirement laws which allow or cause teachers to retire at 65 years of age. Allowing or requiring teachers to retire at 55 would give considerable flexibility to school districts in terms of their abilities to recruit newer social types. Incentives in the form of higher retirement pay would have to accompany such a plan, however. The obvious argument that this would be too expensive does not necessarily hold true. First, personal contributions to retirement could be increased. Second, part-time teaching arrangements would be possible, particularly for outstanding retirees past the age of 55. Finally, by decreasing substantially the average age of the teaching force, the corresponding average salary level of the teaching force itself would be decreased substantially. Such systems, perhaps with Federal financial incentives given, should be experimentally developed.

For the time being, much of the effort to improve teaching has to be directed at designing strategies to improve the training of our present teachers and administrators. In addition, the training of those who are preparing to enter education must also be improved.

Such strategies propose to create change in the organization, procedures, and power structure of education through the initial training of persons entering the field and the retraining or continual training of existing personnel in the field. Current, emerging, and proposed strategies can be subdivided on the basis of the target population of the training: preservice training for persons before the assumption of field responsibility; and inservice training for persons operating in the field.

Pre-service training strategies can arbitrarily be grouped into two classifications: (1) traditional and (2) emerging.

In traditional strategies (those most common) teacher trainees take basic liberal arts courses, pedagogical courses, and a brief period of student teaching in the field. This method is characterized by an interface between student and professor with status and power in favor of the professor (53); fragmentation of training (40); the same recipe of training doses for all trainees (40); and minimal bridging of theory into the behavior of the trainees (40).

In 1967 the U. S. Office of Education, Bureau of Research, initiated the production, development, and implementation of model programs for the training of elementary school teachers. The program was divided into three phases. In the Phase I portion, nine proposals, out of some eighty proposals submitted, were funded for development; during Phase II, these nine and one additional were funded for development of feasibility studies on the models. The ten funded institutions included:

University of Pittsburgh
Florida State University
University of Georgia
Syracuse University
Teachers College, Columbia
University of Massachusetts
Northwest Regional Laboratory
Michigan State University
Consortium of State Universities of Ohio
University of Wisconsin

Models developed by these institutions were to have a comprehensive approach to teacher training (35); act as catalytic agents to generate discussion, interaction, and continuing change; and provide a strategy in which new knowledge could be implemented as rapidly as possible to eliminate "painful timelag usually associated with man's social development." (35) The third phase is implementation of the models. At present ten small colleges on the eastern seaboard have studied the feasibility of the various models. They entered the stage of implementation in the fall of 1971. The university of Toledo is implementing the state model by stages beginning in 1971 and continuing for three years until the total Ohio model is in operation (30). The University of Georgia is implementing its own model (71).

While each model is unique, general characteristics of newer models are:

(1) Teacher trainees serve in various forms of internships, thus extending practical experience over longer periods of time.

(2) Instruction for trainees tends to be more individualized, often in laboratories using modules of instruction.

(3) There is more training in cultural aspects of schooling, particularly in cultural characteristics of minority groups.

(4) There is an emphasis upon performance criteria, often through the use of video tape feedback to trainees.

(5) Much more training is "on-site," in the schools with clinical personnel serving more as trainers.

(6) Training tends to take longer, from five to six years.

Additionally, the pre-service training program is seen as a vehicle for (1) providing in-service training to those already in the field and (2) providing a meaningful research base to university personnel.

There are at least eight models of in-service training which now appear to be utilized in American education. Many hold great promise. These eight models are:

The traditional model. This involves typical activities such as supervisor-planned workshops; principal-oriented staff meetings; college coursework outside of school; and limited access to journals, texts, and nationwide scholars perhaps at one in-service total staff meeting. This is a fragmented, piecemeal continued training approach, at best (40).

Government mandate. Under certain titles, Title I of ESEA as a good example, funds for various projects are not allocated unless a school district can meet certain training criteria. This has been very effective in assuring that teacher aides receive at least a minimum of training before they are employed to work with children.

Interpretive development model. This strategy deals with the immediate concerns of practicing teachers, such as those of instructional methodology, as a wedge towards moving their focus out of the classroom into viewing the total school system and its organization with the ultimate aim of reorganizing the school system (113). In a sense it is a problem solving model and has the potential for the development of a good deal of action research. Further, as decentralization occurs it has the potential for involving teachers in decisions about how they wish to collectively spend their limited in-service training monies.

Utilization of change agents. Two examples are the peer group intervention strategy utilized in the League of Cooperating Schools (see section on

Peer Intervention) and encounter group methods, utilized by Systems Development Corporation at Pacoima Elementary School in Los Angeles. In the latter, the change agents are the teachers, who are encouraged through encounter group methods to strengthen their own self-image and ability to solve task-oriented situations. The aim is to develop problem solving, sensitive, aware teachers who can move toward change without fear (90).

"Turn-key" or industry-managed change. In this strategy, the school district hires an outside industry to manage change processes within the school system for a specified period. An example is the Camden, New Jersey School District which hired RCA to structure and manage change with the assistance of inside personnel and college faculty. This strategy may gain favor in districts in which the school board has lost faith in the leadership of personnel in the district but wants rapid change (70).

Teacher-facilitation. Louis Rubin at the Center for Coordinated Education has developed a method to capitalize on each teacher's unique strengths through performance analysis. As a "human coach," these practicing teachers can be the best trainer of other teachers (35).

Mass system of communication. This strategy aims at providing a wealth of prepared materials for in-service personnel. The ERIC Clearinghouse of Teacher Education established in 1968 after the funding of the models will act as a central source for dissemination of research developments and findings in the field. Wayne Howell of Charles F. Kettering Foundation is planning a mass communications package comprised of a series of options. He has suggested the development of 60-90 multi-media packages which would be released about one each month during the teaching year. Each package would be comprised of such media as films, TV program, supplementary reading or viewing materials, would revolve around one educational issue. These packages could provide a focus for an individual school, a town, or larger audience (113).

Leadership training. This strategy deals with making change by training persons who possess varied levels of responsibility along continua within school organizations in behavioral science techniques of knowledge and methods of change. Such persons could include team leaders, the principal or resource coordinator, the district-wide coordinators. Advocates of such an approach suggest that reaching all teachers is such a massive, expensive task that it is not feasible. The strategy calls for reaching key personnel who in turn can re-train others.

II. Assumptions

Assumptions which underly those change strategies which focus on personnel development are listed as follows:

1. "Pre-service teacher education, in-service teacher education, and the schools themselves are dependent, interrelated, and interacting components of one social system..." and a strategy of change must account for this close relationship (40). "Provocation to change must be accompanied or followed by access to the new knowledge and skills that are called for on the part of those who are to effect change." (64)

2. Through the original training of persons entering the field, new methods will be brought into practice in the schools (35). Since the teacher

trained in 1980 may meet several changes before the termination of his teaching career, teacher education programs need to be based on the assumption that self-renewing skills should be an integral of the training program (35).

3. Through in-service training, personnel can keep current with new developments in the field. Knowledge of these developments will then lead to implementation in the school setting. Teachers and administrators are interested in current educational developments and want to learn how to implement them in the classroom (64).

4. Persons in an organizational structure are the key agents for creating change. Goodlad asserts that the principal is the key leader of change within the school (64). Ole Sands claims, "The teacher is the key to making change happen. He is the key as the professional agent closest to the learner. He is the key as he wears four professional hats: (a) an autonomous, competent professional individual; (b) a member of his professional society or organization; (c) a member of a community of scholars on his school faculty; and (d) a key member of a larger school system. " (113) The individual teacher is the person who ultimately decides what will take place in the classroom (132).

5. Through the implementation of staff differentiation, the walls of the traditional classroom may be broken down (37). The personnel in a school are part of a social organization, whose efficiency depends on the division of labor and specialization of roles. "Social organizations develop a formal system which defines division of labor, lines of authority, and rules of procedure. " (17)

6. In an era of exploding knowledge, rapid technological change, persons entering and practicing in the field require methods of self-renewal (19).

III. Problems and Limitations

The potential of effective personnel training lies in the nature and breadth of the teacher training strategy. The strategy must be so encompassing that it engulfs the system so no one can isolate and attack one part and feel that is the only source of resulting problems from the change.

Piecemeal attack results in minimal if any lasting change. An example is the hiring of teacher aides under Title I of ESEA originally without the training of both the aides, the teacher involved, and the administration. Teachers' aides were envisioned as extra hands for overworked teachers and an inroad into staff differentiation in the school setting. However, studies of teacher aide programs have indicated that employment of aides can be a constant source of conflict if the role of the teacher aide is not delineated (7). These studies suggest the need for training of teachers and administrators in the effective utilization of aides and the reorganization of the school to include such aspects as released time for teacher-aide planning, and definition of functions among staff members.

Unless legal changes are made in credentialing and tenure, limits are placed upon school systems which wish to encourage differentiated staffing or internship programs. The concept of tenure is a holdfast against innovations in teaching roles. To succeed in the system now teachers have to practice the behaviors acceptable to those in the system who grant tenure. Such constraints cause people to adhere to norms which encourage the status quo (64).

Teachers and administrators as a group are protective of the status quo and resist radical changes. The greatest resistance to change comes from those who have been successful in the traditional school patterns. They are the ones who have been "the standard setters, the evaluators of new staff, and the decision-makers in school." (13)

Teachers in a self-contained or departmentalized organization structure operate in relative isolation from other adults and minimal social interaction occurs (19). Direct intervention in the social system of the school, such as the implementation of team teaching and staff differentiation (see Task Force II, Horizontal School Organizations for definitions), will be required to break down these walls of isolation (37).

Professional organizations are resistant to changes in staff differentiation and bases for salary changes. They perceive a loss of power, influence and money (13).

Middle bureaucratic management, which is a powerful decision-making group (Gettell, N. Y. C.), is the most resistant to any new changes for they fear the greatest power loss (113).

Without retraining of staff in the schools to receive the student teacher, the value of the theory taught in the training institution will be diminished by the student attempting to cope with the actual fact of the classroom to which he has been assigned (40).

A final limitation and/or problem resides in the fact that massive funding is really needed for such things as:

1. Developing methods and materials for massive retraining of teachers and administrators in the field (113).

2. Funding of new facilities, materials, and methods for teacher education (35).

3. Salaries for academic and clinical training staff (40).

4. Released time from teaching for workshops, interaction and planning (57).

5. Additional salary payments and costs for out of school, required professional improvement (e.g., leadership training; supervision techniques).

IV. Example

The model of teacher education developed by the Consortium of State Universities of Ohio was chosen because the scope of its implementation included a university training setting, the University of Toledo, and a school system, the Toledo Public Schools (101). This model was designed to coordinate all phases of teacher education from preservice training to in-service education in the school system. The target populations of the project include:

1. Pre-service education of pre-school and kindergarten teachers.
2. Pre-service education of elementary teachers, grades 1-8.
3. In-service teachers.
4. College and university personnel involved in pre-service and in-service education.
5. Administrative personnel.
6. Supportive personnel: teacher aides and paraprofessionals.

The model was developed on the assumption that an innovative teacher education program will be reflected in changes in the schools in which the model is applied and where the future teachers will seek employment. This model was based on the trend toward a multi-unit school in which team teaching and staff differentiation would exist. The steps in this strategy were to develop goals for education, contextual applications, and behavioral objectives and educational specifications. The five contextual applications included:

1. Since teachers are to be trained for a multi-unit school with team-teaching and differentiated staffing, teacher education should incorporate those approaches in the organization and teaching of the faculty.

2. Since technology will be included in future teaching of pupils, teachers should receive the benefit of training with video-tapes, etc., as in micro-teaching with feedback from video-tape of the teaching session. Teachers should learn rudimentaries in computer assisted instruction.

3. Teachers need to know how to keep up on research findings. They need an empirical and research-oriented approach to both pre-service education and employment in the field.

4. Contemporary knowledge of the teaching-learning process should be implemented in the process of teacher education and in the outcome or overt behavior of the future teacher.

5. Teachers need to be prepared for a multi-cultural and dynamic society, not the traditional middle-class oriented society.

In the third step, detailed educational specifications were developed to accommodate more than 2,000 behavioral objectives. In the feasibility or Phase II of the project, four optional programs were developed for six target populations and six orientation programs for the three in-service populations. Since these specifications are only suggestions for a method to accomplish a given objective (and objectives, too, can be fleeting), continual evaluation of objectives and specifications are incorporated into the model.

In order that the effectiveness of this teacher education strategy could be compared to the effectiveness of other models, an evaluation model was designed. This model provides for a redefinition of policy-making within the school system. It envisions at the district level a system-wide policy committee which would act as liaison between school board, community, school and university. Under this committee, each school would possess a steering committee for school policy decisions. Within the school, teams of teachers and staff would operate as a unit decision-maker. A unit would consist of team leader, teachers, teaching assistants, and teacher aides. The role of the principal in a differentiated staff arrangement "more closely resembles that of a hospital director who uses his talents to facilitate professional tasks of his staff." (101) University staff within the school setting would act as clinicians, a source of expertise.

The in-service aspect of the model was implemented at Martin Luther King, Jr. School. A steering committee of the school was formed and outlined the policies for in-service teacher education. A university professor met once a week with individual team units to define and plan teaching units. A second request made of university staff was to train cooperating teachers responsible for the daily training of student teachers. Definition of problems arose from the staff and the university provided the expertise in reaching solutions.

As part of pre-service teacher education students from the University of Toledo were assigned to a unit in the school. Each student began instruction on a graduated basis, moving toward greater responsibility as diagnosed by the cooperating teacher and clinical professor.

Development-implementation efforts were begun at the University of Toledo in 1969, and in fall, 1971 students received the first introductory "course" in the new model program. George E. Dickson wrote that only immersion of the faculty into the planning of the implementation of the model produced action. "Telling isn't teaching (or implementing)." Dickson continued, "The better strategy that emerged was one where all involved with model development, student, college, and public school personnel, became identified with a programmatic effort designed around a system to organize and conduct the necessary effort to implement the Ohio Model at the University of Toledo." (30)

V. Decision-Making

The direction of the emerging strategies in teacher education and personnel training are to decentralize the power in curriculum decision-making (72) from a bureaucratic hierarchy to a structure in which the individual school administrator and teacher has more power. The individual school staff becomes the diagnoser of problems and prescriber of future action. Upper management is looked to for district policy guides and university faculty as a source of expertise.

Personnel training is being brought into the context of a large social system, that of the total educational system. In the Ohio Model, "The University has the primary responsibility for the pre-service training of potential teachers and paraprofessionals, and the in-service training of its own faculty. The public schools have joint responsibility with the University for the in-service education of its teachers and administrators (101).

VI. Potential

Personnel training possesses great potential as the core catalyst in a macrosystem of learning (53). If we accept economist Peter Drucker's assumption that the development and acquisition of knowledge will be the most desired commodity in the economy of the future, the strength of the educational institution will depend on its capacity to innovate, disseminate and utilize knowledge as efficiently as possible (33). In the past, the impact of this strategy has been greatly diminished by its one-directional flow of new ideas from the academia in the colleges and universities to the new or existing practitioners in the field and from the echelons of the bureaucratic school hierarchy.

For any strategy to "pack a punch," it must have a multi-directional flow of ideas so all participants possess a source of regeneration or self-renewal. The model set forth by John I. Goodlad in his address at the Centennial Lecture Series at Southern Illinois University contains such a flow of ideas from academia to school to teacher within the educational settings of the university and the public school (40). This model puts into practice the ideal model of knowledge flow within a macrosystem as conceptualized by Havelock (53). [See Figure 8.]

Since the faculty of a university tends to be theoretical in nature and research oriented, Goodlad asserts that such persons possess only a portion of the knowledge and skills that need to be transmitted to the future teacher. Clinical workers from the field, defined as those within the public school system, need to be assigned with university faculty as a training team for future teachers.

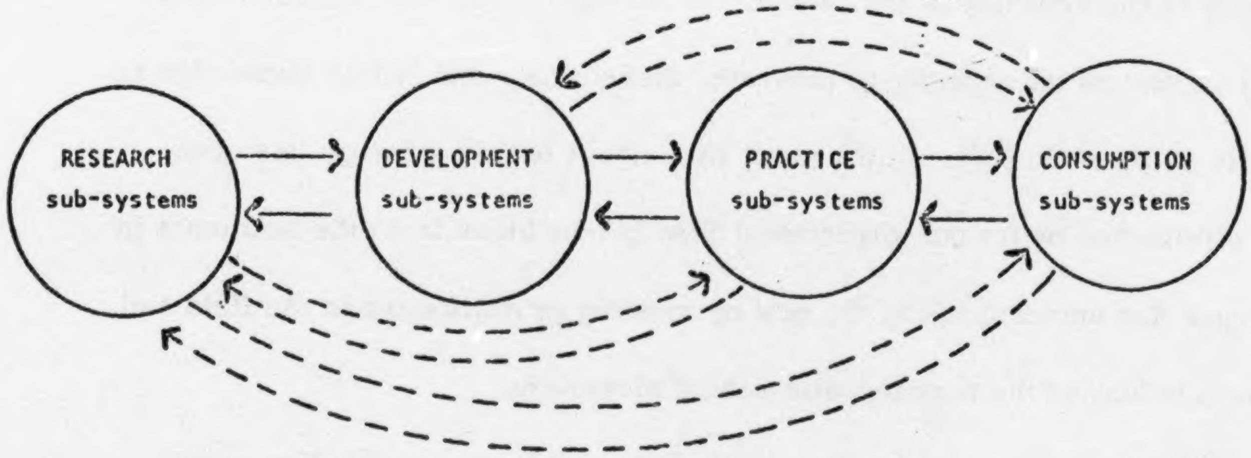
RESEARCH
sub-systems
DEVELOPMENT
sub-systems
PRACTICE
sub-systems
CONSUMPTION
sub-systems

Figure 8: Knowledge Flow Macrosystem Roles: An Ideal Model with Controlled Access and Sequence Suggested

The academic and clinical faculty would conduct seminars which would center around the current problems of beginning teachers and analysis of teaching behaviors in a reality setting. This basic curriculum of teacher education would be comprised of a series of learning modules and the knowledge attained from the modules be applied in critiquing daily lessons, either taught by the faculty or experienced teachers in the school setting. Not only would this method be beneficial for the growth of future teachers, but the teacher and staff within the school would soon be caught up with this spirit of inquiry and analysis of teaching behavior.

Such a feeling of inquiry would hopefully stimulate the schools connected with teacher education to become laboratories for field research into the identification and solution of problems residing within each school. This self-renewing aspect will direct what in-service programs would be necessary to provide competencies to cope with the solutions of those problems. Thus, a cycle of self-renewal is set up among the teachers, the clinical and academic faculty, theoretical and field research, and the needs of the community. Such a cycle could lead us to achieve our goal, quality education and equality of educational opportunity for all of our citizens.

Systems Planning

I. Explanation

A systems approach is a process for the planning of change. It proceeds through a series of steps and provides an educational planner with a "direction" for achieving more efficiently whatever his goals might be. The process can be as simple or as elaborate as the planner desires or is able to afford in terms of computer facilities, personnel, and so forth.

At the simplest level, the planner has to ask himself three important questions: (1) What do I want to do? (2) How am I going to do it best? (3) How do I know how well I've done it? In other words, he has to use a process of rational problem solving.

At a more sophisticated level, there are newer modes of planning and analysis which can be utilized to make more rational decisions about efficient use of resources (inputs) in order to gain maximum educational benefits (outputs). These newer modes, cost-benefit analysis, systems analysis, and program budgeting, have been utilized successfully by government agencies other than education to make rational budgetary decisions (92, 60).

Such modes have been theoretically and experimentally applied to educational budget decisions (130, 3, 59, 75), are currently under further intensive study (21, 76) and actually have been applied in limited educational practice (2, 26). The most generalizable feature of such modes is that they are aids to decision-making designed to get around the vast areas of uncertainty where quantitative analysis leaves off and judgment begins.

By utilizing these newer modes of analysis as well as other management tools such as linear programming, PERT, CPM, RAMPS, computerized data processing and simulation (58, 31, 47, 81, 85, 89), a school district can rationally deal with the problem of reducing its budget, expending new funds, or deciding between alternative courses of action.

Such an analysis proceeds through a series of steps. These steps are: (a) identification of objectives, (b) identification of alternative programs, (c) estimation of costs and resources necessary to each alternative, (d) development of heuristic models which define relationships between inputs and outputs, (e) identification of performance criteria, (f) decisions based on the application of criteria to alternative programs, and (g) evaluation.

Objectives. Very few school districts have stated objectives in a form which makes it possible to clearly relate them to educational costs. By utilizing a program budget format, such objectives not only become clear to tax payers and board members, but they also serve as a basis for cost-benefit analysis, rational allocation of resources, and evaluation of the effectiveness of resource utilization. The use of program budgeting also helps in determining the appropriate mix of different educational programs and serves as a mechanism for making choices between alternative programs at various levels of decision-making--the district, the school, the department, and the classroom. Simply stated, a program budget differs from the conventional budget in that it lines out costs by output rather than by function.

Categories at one level are by major programs such as pre-kindergarten, elementary, junior high school, high school, summer school, adult education, etc. At another level, they are by sub-programs, such as reading, math, science, etc.; or they are by function, such as administration, teachers' salaries, textbooks, etc. Another important characteristic of a program budget is that it clearly distinguishes between general support programs and reimbursed programs. Conventional budgets do not make such clear distinctions.

Program budgeting, combined with computerized data processing, clearly provides for clarification of objectives, relating objectives to cost, and sets the stage for analysis and rational budgetary decision-making.

Alternatives. The heart of systems planning is the identification of alternative programs which will reach objectives clarified by program budgeting. It is at this stage where knowledgeable instructional personnel are necessary. If an objective is to have all 12th graders reach a minimum level of mastery in a foreign language, instructional personnel must be able to identify alternatives to attain that objective--native speaking teachers, ALM, EBF, language laboratories. In addition, they must consider alternative beginning times for such programs--grade one, grade four, junior high school, etc. All aspects of each alternative must be considered, teachers required and available, capital outlay requirements--amortized or not--materials, etc. Also, spillover must be identified; i. e., --what is the effect of various foreign language programs on English language instruction, social studies, etc.

Costs. The next step in systems analysis is to estimate costs or needed resources. Again, as in consideration of alternatives, it is important that all aspects be considered including related costs and "spillover" costs and savings. Also, it is important that costs be projected into the future for each alternative and that distinction be made between such factors as general support and reimbursed support.

Once alternative choices have been identified and related costs estimated, a total systems analysis is well on the way toward rational budgetary decision-making.

Models. There are a variety of techniques for bringing inputs and outputs or costs and objectives into relationship. PERT and CPM are often utilized (although not extensively in education) in planning and manipulating resources to attain a stated objective. Such network analyses tools are often applied to time and cost reduction. RAMPS is applied to multi-projects. Linear programming is a method for specifying how to use limited resources to obtain a particular objective and is useful in selecting between alternative courses of action.

Models, or abstract representations of reality, are most useful. They explain relationships in the real world and allow for manipulation of alternatives in order to determine which among them will produce the closest approximation to the desired outcome. Methods are derived from mathematical model building, experimental testing, and even gaming. Computers make possible the representation and comparison of complex systems. A good model allows for good predictions and moves the budget maker closer to rational decisions (99).

Criteria. "Criteria" mean the tests by which one alternative or system is chosen rather than another. The choice of criteria is important. In principle, the desired criterion is the optimal system which yields the greatest excess of positive values (objectives) over negative values (resources used up or costs). In other words, it yields the greatest cost-benefit ratio.

In education, such criteria are hard to come by. Objectives and costs often have no common measure. There may be multiple objectives or costs which are incommensurable. Educators are critical of reliance on standardized achievement data as criterion measures. However, the problem is not that the economist or system analyst is wrong in suggesting their use. The problem is that educators need to develop adequate criteria based upon their objectives.

When such criteria are not available, some approximation to ideal criteria must be made so that it can be said that system A may not be optimal, but that it is better than some other system or systems. In many cases, reliance must be placed upon the intuitive judgment of well-informed people.

Decisions. Advocates of systems planning suggest that if educators would follow such procedures, appropriate persons would be able to rationally weigh the values of adding or deleting programs to the ongoing enterprise. They suggest that decisions would be made on the basis of evidence rather than on the basis of "seat-of-the-pants" hunches. There would not be such a mad rush of confusion at "budget time."

Evaluation. The field of evaluation is a rapidly developing one in education. This development has come to the point, or soon will, where it will be of great use to planners. The following statement summarizes the field adequately:

> Evaluation is concerned with the determination of "what's being or been accomplished." Historically, in education, focus on evaluation has been upon outcomes (or product, or ends) and there has been a tendency to neglect determination of the utility of the process for achieving required outcomes.

> ....two kinds of evaluation [should] be implemented in educational planning: Summative Evaluation and Formative Evaluation. Summative evaluation is concerned with outcomes and the extent to which they meet identified needs. Formative evaluation is designed to monitor the changes that occur in development, and as the data is re-fed back to the planners and developers modifications in process and procedures may be achieved. Thus, planning concerns itself with evaluation; it utilizes evaluation to assure that methods and means of planning and doing are "on target" and will be successful.
>
> Criterion referenced evaluation differs from "norm referenced" evaluation in that the former provides measurable criteria based upon actual needs. Instead of only sampling a whole domain of possibilities, criterion referenced evaluation techniques intend to measure all parts of each critical variable being considered... Thus, there is an emphasis upon the evaluation of both product and process (or ends and means) based upon realistic and valid criteria. Dimensions for evaluation (and thus planning) include the educational context, input conditions, products and processes (65).

There are other planning "systems" and other suggested planning "procedures." Terms like needs assessment, mission analysis, function analysis, task analysis, system synthesis, requirements and resources, quarterly report, and so forth will probably become common language in education as forms of long range planning are adopted as strategies for change.

II. Assumptions

There are at least six assumptions which guide those who propose the use of systems planning as a strategy for change in education. First, there is an assumption that in each school district and school there is or can be the existence of an analytic capability for an ongoing, in depth analysis of goals and objectives, the various programs to meet these goals, and the evaluation of programmatic success (22).

Second, there is an assumption that careful planning in education can lead to better results than typical practice when that practice is defined as being solution oriented. That is, educators have tended to identify a solution, be it a new organizational pattern, a new curriculum, or a new instructional strategy, and to install it with little or no attention to what the basic needs, problems or goals might be. At best, when results are evaluated there is often "no significant difference." (65)

Third, in a time of economic difficulty, the public tends to be reluctant to invest in new programs unless they have evidence of some potential success or at least of adequate planning. This cry for accountability suggests that educators will do better in convincing the public of the value or need for educational change if they involve themselves in systematic planning before they propose new and improved programs.

Fourth, the educational enterprise is becoming more complex. There are, in fact, new problems and there is a variety of alternatives available to educators. Without careful planning educators will not be able to deal with such problems nor will they be able to select appropriate alternatives.

Fifth, there is an assumption that planning, when it is long-range, allows for an adequate time sequence and a set of procedures for the involvement of all appropriate people in budget and program decisions, the community, teachers, the board, and so forth.

Sixth, there are needs for new kinds of data and information in education. Education and the public are interested in the development of affective behaviors and higher cognitive abilities. Without careful planning and attention to relating goals, processes, and evaluation procedures, the schools will not know how well they are doing in the development of such behaviors.

III. Limitations

An obvious problem or limitation of systems planning is cost. In California it is estimated that it will cost one percent of the total funds expended on elementary and secondary education in the State to implement PPBS fully.[15] (This may be too conservative an estimate, with the figure being more like five percent.) In an age of economic recession, this is almost an impossible burden unless the whole tax structure is overhauled and substantially more funds allocated to schooling.

A second major limitation with systems planning as it is now operative is that it is most often an imposed way of operation. That is, it moves downward from the state level to the district and finally to the classroom. We know that "telling people" is an ineffective means for changing behavior. People, children and adults, need to become involved in those decisions which affect their work and their very being. There is a very real danger that management systems or planning systems will, in the end do more to rigidify operations than to "free them up."[16]

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[15] PPBS is under significant study in the State of California. Program Budgeting is now common. Whether a total planning system is mandated will be known by 1973. The position of the State Legislature and State Department of Education seems to be to support decentralization of decision-making but with adequate controls. PPBS is seen as providing those controls. See: Educational Goals and Objectives. California School Boards Association, September, 1969.

Related to the problem suggested above is the fact that a massive and effective in-service training program must be mounted to retrain all educators in systematic ways of thinking. Too frequently, in many such re-training activities, there is a preoccupation with the "system" itself with too little attention paid to human factors: involvement, decision-making, communications, and so forth. If people are to be trained in new ways of thinking it is better to start with a simple paradigm such as "What is it we want to do?" "How shall we do it?" and "How will we know how well we have done?"

There is also a real danger that forms of systems planning, particularly PPBS, will lead to statewide systems of education. In 1968, the California Legislature passed and the governor signed into law a major piece of education legislation. This was Senate Bill Number One which was also called the Magna Charta of Education and the John Miller, Jr. Education Act. That law resulted in the elimination of a large portion of the California Education Code and allowed school districts to change their instructional programs to better meet the needs of their students. It was stated in this law, ".... the governing board of any school district may include in the curriculum of any school such additional courses of study, courses, subjects, or activities which it deems fit the needs of the pupils enrolled therein." The law also stated that school districts are expected to develop educational goals based upon the needs of students. It is from this last statement that PPBS arose. The imposition of a statewide management system, however, runs a very high risk of negating the value to be found in Senate Bill One. State responsibility should not be confused with state control.

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[16] The so-called "scientific management" movement in education during the 1920's was, in fact, a "fizzle." The movement is well documented in Callahan, Raymond E. Education and the Cult of Efficiency. The University of Chicago Press, 1962.

Another serious problem with PPBS is its heavy emphasis upon the statement of measurable objectives. First, learning to state such objectives and measure them accurately is a difficult, time consuming process requiring skills educators do not now have. Such skills can be learned, but that leads to more serious questions such as "Is it worth the time to do so?" or "By being highly behavioral, do we lose sight of some of our more humanistic educational values and goals?" or "What is the proper mix between cybernetic and open-ended instruction and learning?" Such questions are loudly debated, but not necessarily answered. The overriding question is clearly stated by Churchman and Weber who are quoted by Michael as saying:

> It is not at all clear that the [planning and programming] methods which have worked within the unitary managerial system of an industrial aerospace corporation can also be made to work within the pluralistic political system of local government. Sources of funding are very different. The distribution of authority is far more dispersed in the public arena. Goals of cities' populations are far more diverse and more frequently competing. And the fundamental epistemologies are extremely different (92).

Yet another serious limitation with systems planning is our inability to utilize cost-benefit analysis in areas of human behavior. No system of evaluation, including highly sophisticated computer simulation, eliminates human judgment. The adage "garbage in - garbage out" applies not only to computers but to all forms of closed systems management. The Lockheed Corporation, which uses program budgeting systems analysis and techniques such as PERT and RAMPS in planning, is an example and it deals with hardware output, not human behavior.

There are other problems in systems planning, many which have to do with budgeting procedures related to such things as indirect costs, food services, fixed charges, and so forth. But these are minor when compared to problems of values, centralization, technocracy, cost, and becoming enamored with systems rather than focusing upon the real problem, the provision of quality education and the equality of educational opportunity.

IV. Example

In the State of California in 1969, the California Elementary School Administrators' Association, in cooperation with over sixty school districts and in anticipation of a mandate of PPBS statewide in 1973, began a project to train its membership in systems planning. This project was both notable in its content and in that it demonstrated that such an association could use its good offices to actually assist in the re-training of its membership (6).

The type of training provided for the selected principals, approximately 120, was in needs assessment, systems planning, management systems and leadership. This, too, was noteworthy in that it was a training program not only in how to plan and to evaluate, but in how to work with people to be more effective in such planning.

As a beginning point, most principals in this project became involved in needs assessment procedures which had been developed by the Center for the

Study of Evaluation at UCLA (20). They also assisted in the training of other principals in their own school districts.

The project used a deductive model. That is, principals started with a predetermined list of objectives as developed by the Evaluation Center at UCLA. They went to teachers and parents and through a simple card sort procedure determined which objectives were of priority importance to the schools. Thus, they gained consensus on what was important for the single school.

Each school established its priorities in a different manner, but the general pattern was for priority selection to be made by panels of concerned parents and teachers. Useful criteria for "sorting" needs into action priorities included such things as:

1. what does it cost to meet the need?
2. what does it cost to ignore the need?
3. what do we value the most?
4. where are we the most deficient?

Many schools in the project have only proceeded this far. Some principals have had difficulty, not only because of natural resistance, particularly by teachers, but because they failed to consider the human dimensions of change--communication, involvement, and so forth. Further, many had difficulty because they failed to simplify procedures. Building an elaborate systems design on a wall and then trying to force people into the boxes on the wall somehow doesn't do the trick. People have ways of "wiggling out of the boxes." (137)

All in all, however, most principals in the project have been successful in accomplishing the first task, needs assessment. The real success of the project will come when they can move to selecting appropriate alternatives and evaluate their progress in new directions. This is an example, at least, of one large segment of education attempting to improve education through the use of systematic planning.

V. Decision-Making

As with other change strategies in education, one of the central questions related to systems planning is "Who decides what?" There is also an additional complicating factor. Computer simulation, systems planning, newer budgeting procedures and the like require a set of skills not now common to educators and not very well understood by the people as a whole. A whole new group of persons is being trained or retrained to perform planning functions in education. There is a danger that a new type of "elitism" can grow out of this movement, with planners, by-and-large making most significant decisions.

Such a tendency, and it is real, needs to be counterbalanced by procedures such as needs assessment which involve all actors in appropriate decisions. Further, evaluation procedures must be built in and feedback given, in language that is clear, to all who are involved. In part at least, the so-called "credibility gap," applied to whoever is President at the time, is as much a product of the sophisticated planning done in the Defense Department and not understood by the populace as it is a function of the media reporting whatever the President might do.

The tendency, also, for decision makers at high levels in any hierarchy, be it the state or the school district, to use planning as a tool to hold subordinates accountable is very dangerous stuff. As was discussed in the section on political strategies, the key problem is to determine who plays what roles in decision-making. If systems planning becomes a "downward" strategy, it runs the risk of negating the value of decentralization. Further, it runs the risk of threatening some of the very basic values we hold in this country relative to participatory government.

VI. Potential

The most obvious strength of systematic planning is its focus on purposefulness and goals for education. Both Silberman (123) and Goodlad and Klein (41) pointed out quite clearly that school people are not involved in the discussion of purposes, goals or real problems. Some type of needs assessment and goal determining procedure, deeply involving teachers and community in a discussion of purposefulness, can be a very positive outcome of systems planning in education.

A very positive outcome of program budgeting, as distinct from a total system of planning, is that education can begin to know how much it is investing in given programs such as art, mathematics, reading, and so forth. Such information would lead to the raising of a number of very significant questions related to purpose. For example, "Should we really have mathematics instruction in the primary years?" or "What kind of primary reading program should we have so that we don't have to teach reading, except to a few in the intermediate phase of schooling?" or programmatically "What benefits might we accrue from non-grading and team teaching?"

A third advantage of implementing systematic planning has to do with the whole matter of accountability. Once education can establish goals, once it can relate alternative strategies to such goals and once it can evaluate (both formatively and summatively), it can be accountable. If it is not doing its job at that point, it has powerful data to use in suggesting to its leaders and the public as a whole that, in fact, it is not receiving an adequate share of the gross national product in light of what it is expected to do. While "accountability" may be a strong tool in the hands of those who now wish to minimize educational expenditures, in the long run, with adequate planning, it can probably be turned around to question the accountability of those who oppose investment in human development.

Taken only as a "tool," the limitations of systems planning are greater than its potential. If this strategy is used to its fullest potential, however, it can be of great value in assisting with needed changes for education. Perhaps the best way to view the strategy is to suggest some parameters to be placed around its use:

1. We must decide collectively who decides what.

2. At all levels of decision-making we must use rational problem solving procedures.

3. We must attend to purposefulness as a first step.

4. We must remain resolute in our cry for local decision-making.

5. We must not slip into the tendency of indentifying only discreetly measurable behaviors. We must leave room in the educative process for humanism, intuition and even serendipity.

6. We must not use cost as an only basic criterion. Values and purposes are more important.

7. We must question programs in light of purposes and our knowledge of growth and development.

8. Financial needs of education must be presented to the public rationally.

9. We must involve--for education may be the one remaining institution which can develop models of participation which in turn will stand between 1972 and Orwell's 1984 (135).

Experimental Centers

1. Explanation

Experimental and model schools have existed for a long time. The public school system has traditionally set up model schools in an effort to show that good practice "could really work"; universities have supported laboratory schools to explore ways of making the system work better; and experimental schools have been designated to try out different curricular or instructional programs--programs that could be incorporated into the system.

The problem with many of these schools, experimental and model, is that they have neither received adequate financing nor have they truly lived up to the task for which they were designed. In addition, the two separate issues, experimentation and demonstration, have most often been confused with the result that neither function has been carried out well. In addition, too often so-called demonstration schools, particularly at colleges and universities, have ended up being teacher training schools. This in itself has militated against adequate teacher training, most of which should take place in the field and over a long period of time.

The fate of the so-called demonstration schools at colleges and universities in California is well known by now. By 1970, all but one, University Elementary School at UCLA, were closed. While part of the reason was financial, in the main they were closed because they were not performing their function(s) adequately.

The fate of most "exemplary" school programs funded in the early years of Title III of ESEA has been the same as that of the California's laboratory schools. They have "faded" away without making any distinguishable mark on American education. The same is true of the TEPS-NEA and |I|D|E|A| nation-wide networks of demonstration schools (76).

With such a sad history, the question can be raised as to why this report would even bother to consider experimental and model or demonstration schools as a potential change strategy. The answer lies in the possibility that education has learned from previous mistakes, and that there are new, bolder, and more rational proposals for making such schools a vital force in education. Two examples should be cited to demonstrate this point.

In the 1969 Report from the State Committee on Public Education to the California State Board of Education, Goodlad proposed the establishment of experimental and demonstration schools as follows:

> [Experimental Schools] There should be several independent laboratory schools committed to inquiry, innovation, and research in education. The conditions under which public schools operate make experimentation a virtual impossibility. We need laboratory schools charged with experimental functions that exist only to be on the frontiers. With very few exceptions, our present laboratory schools are not experimental; they exist to fulfill questionable teacher education functions.
>
> True laboratory schools must control their admissions policies and not be subject to state and local school regulations. They exist to be different. One way to effect these conditions is to build such schools in areas of anticipated rapid growth so that parents in the community will not be inconvenienced if their children are not selected for these experimental schools. In this way, parents will have to apply and be subject to school policies of experimentation . . . . The creation of several experimental laboratory schools is one of our most pressing needs. . . .

> [Demonstration Schools] There should be a network of demonstration schools deliberately trying out the ideas developed in the laboratory schools. These should be regular public schools identified for their advanced development of innovative ideas. Thus, they would provide models for other schools. Visitors to laboratory schools too readily dismiss what they see. Instead they should visit schools very much like their own...(19).

This recommendation was taken seriously in the State of California. There was much discussion of the notion and even some beginnings to plan. However, the then Superintendent of Public Instruction paid not much more than lip service to the idea and it was not really implemented. Since 1971, with a new Superintendent, the idea is on the rise again.

A second impetus was given to the notion of experimental schools in March, 1970. In his Message on Educational Reform, President Nixon introduced the experimental school program to provide an opportunity for long-term testing, documentation, and evaluation of alternatives to present school practices (20).

Initial applications to this program were submitted in the spring of 1971. Guidelines from the U. S. Office of Education called for:

1. goals and purposes;
2. a plan for design, implementation, operation and community involvement; and
3. a listing of operational variables such as curriculum, staff, time and space, administration and evaluation.

Schools to be selected during fiscal year 1972 were to have from 2,000 to 5,000 students. Grants would not provide basic per pupil support, construction, or regular operational costs. The program assigned a high priority to projects which would focus primarily on students who were not experiencing educational success and who came from families with low incomes. Finally, both formative and summative evaluation was required.

While this program is not nearly as comprehensive as that suggested by Goodlad, except in the amount of money it proposes to spend, it is an indication of an interest in the experimental center as a strategy for change.

II. Assumptions

In a sense, the assumptions which underly this potential change are similar to those of the Research, Development and Diffusion Strategy, except that the emphasis is upon working in schools with children and teachers with real problems. The assumptions are:

1. There needs to be a great deal of experimentation in education so that new and better instructional practices can be developed. Much of this experimentation must be carried on in school-like laboratories.

2. What is developed in laboratory settings must be demonstrated in a network of schools which are typical of all other schools.

3. The experimentation, demonstration and teacher education functions must be clearly defined so that functional confusion does not occur as it has in the past.

One other dimension of the Goodlad report should be mentioned. That is, he proposed that experimental schools and demonstration schools in a given geographic area should be hooked up via closed circuit or some other form of television so that ideas would flow easily. Ultimately, it would be hoped that all schools in an area could be brought into the communications system.

III. Limitations

This strategy, as with the R, D & D strategy, faces several limitations or problems. First, while it would not require a great deal of funding to launch such a strategy nation-wide, we are in a period of time when consideration of research is not too favorable.

Second, there is a danger in translation from experimentation to demonstration to ultimate practice. Likewise, there is danger of vested interests setting in. That is, experimentation for the sake of experimentation rather than for the ultimate purpose, improved practice. In response to this problem, Goodlad has said:

> Let me stress that this entire structure proposed for the conduct of innovation, demonstration, and implementation and what goes on in it must be subjected constantly to the sharpest scrutiny. . . . the effectiveness of this mechanism [must be examined] from the standpoint of change and communications theory and the progress of ideas through it. Do there appear to be bottlenecks, points from which ideas seem not to move further? Are the concepts guiding innovative ideas at the laboratory school level being distorted as they move into practice at the demonstration school level? These and other questions provide focus for continuing study (39).

Third, there is the problem of identifying and employing competent personnel for experimental and model schools. Such a limitation should be carefully considered, criteria carefully established, and screening and training carefully conducted.

IV. Example

There is no example of this strategy actually in existence. One will need to wait for the implementation of the U. S. Office of Education program or some other program. To refer to earlier "experimental" or "model" school programs would not be fair under the newer conception proposed here.

V. Decision-Making

The U. S. Office program clearly calls for the involvement of the community in decision-making. In this sense, it overcomes one of the failings of the classic R, D & D strategy which depends almost totally upon the researcher or generator of theory and ideas for decision-making.

As with all other strategies, the critical question to answer is "Who makes what decisions?" from design to ultimate implementation.

VI. Potential

On the one hand, there are so many proposed improvements on the educational scene that one is almost overcome by the possibilities. On the other hand, we know almost nothing about their combinations, about how learning theories interact with contextual variables, about what are proper mixes of curricula and instructional strategies for particular learners, about so much. The short of it is, we need much experimentation yet in education. No industry, no business, no other institution would proceed as American education does without at least a three percent investment in research and development. If it is well managed, whatever we spend has the utmost potential.

Also, as described and as shown in the League of Cooperating Schools (see section on Peer Group Strategy) newer ideas can be demonstrated in schools which are like all other schools. This is an important factor if we really wish to provide quality education and the equality of educational opportunity.

Alternatives to Public Education

I. Explanation

Since the beginning of public education in this nation, private schools, church related schools, and independent schools have been in existence. In the main such alternatives have merely duplicated the provision of the public school, or may have simply added a special feature, such as boarding facilities or religious indoctrination to the school program. In some cases, quality teaching has characterized private education.

Within the last decade, several new phenomena have begun to emerge as alternatives to public schooling, several of which will be examined here. Among them are guaranteed performance contracting, the voucher plan, franchise schools, the "new" school, mass communications, and revitalized parochial education. Individually, none of these developments represents a strategy. However, collectively, and if backed by policy and resources in the future, they could be developed into a strategy for improving public education.

Guaranteed performance contracting as a change strategy proposes to create alternatives, innovation, and change within the public school system by means of outside intervention. It is a flexible process through which schools can enlist a coordinated group of outside resources that can help to pay for, define, provide, and evaluate programs to meet local needs.

According to Lessinger (79) a performance contract is a legal agreement between a local school board and a supplier of instructional programs. Payment to the supplier or firm will depend on the degree of increase in student accomplishment, which is independently audited. Generally described, performance contracting is a formal agreement between a local board of education and another group "to achieve certain specified gains in student performance within a set period of time at a predetermined cost. Payment is based on results (105).

The ultimate voucher plan as it is now conceived would call for the establishment of an Educational Voucher Agency (EVA) which would administer the vouchers. Every family in a school district would receive a voucher for each school-age child. The value of that voucher would initially equal the per pupil expenditure of the public schools in the area. Schools which took children from families with below-average incomes would receive additional payments on a scale that might, for example, make the maximum payment for the poorest child double that of the basic voucher.

In order to become an "approved voucher school," eligible to cash vouchers, a school would have to:

1. Accept a voucher as full payment of tuition.

2. Accept any applicant so long as it had vacant places.

3. If it had more applicants than places, fill at least half these places by picking applicants randomly and fill the other half in such a way as not to discriminate against ethnic minorities.

4. Accept uniform standards established by the EVA regarding suspension and expulsion of students.

5. Agree to make a wide variety of information about its facilities, teachers, program, and students available to EVA and to the public.

6. Maintain accounts of money received and disbursed in order to show

that a school was getting the resources to which it was entitled on the basis of its vouchers; if a school operated by a church was being used to subsidize other church activities; and if a school operated by a profit-making corporation was siphoning off excessive amounts to the parent corporation.

7. Meet existing state requirements for private schools regarding curriculum, staffing, and the like.

Every spring, each family would submit to the EVA the name of the school to which it wanted to send each of its school-age children during the next fall. So long as it had room, a voucher school would be required to admit all students who listed it as a first choice. If it did not have room for all applicants, a school could fill half its places in whatever way it wanted. It could not, however, select these applicants in such a way as to discriminate against racial minorities.

Upon enrolling their children in a school, parents would give their vouchers to the school. The school would send the vouchers to the EVA and would receive a check in return. [See Figure 9.]

At the present time, the Voucher Plan is supported by the Office of Economic Opportunity (OEO) which granted funds in 1969 to the Center for the Study of Public Policy in Cambridge, Massachusetts for the study of voucher plans for elementary school children. During the 1970-71 school year five districts were to be identified for experimental purposes, with planning to take place during 1971-72 and trial testing until 1980.

In order to deserve support from OEO, a voucher plan must have two overriding objectives:

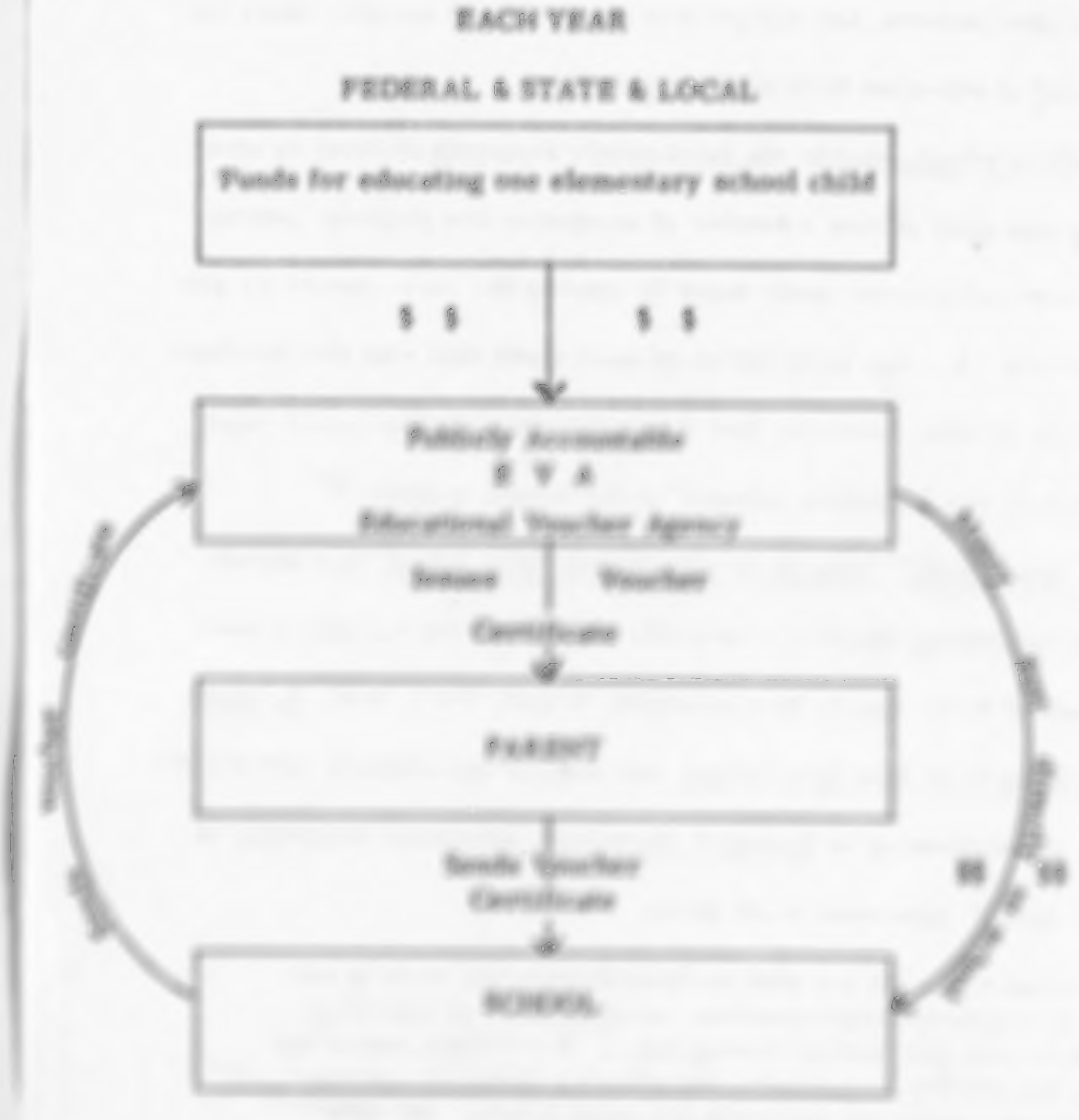
EACH YEAR
FEDERAL & STATE & LOCAL
Funds for educating one elementary school child
$ $
$ $
Publicly Accountable
E V A
Educational Voucher Agency
Issues
Voucher
Certificate
PARENT
Sends Voucher
Certificate
SCHOOL
Sends voucher certificate
$$
$$

Figure 5. The Voucher Plan

1. To improve the education of children, particularly disadvantaged children; and

2. To give parents, and particularly disadvantaged parents, more control over the kind of education their children get.

Franchise schools may be the most quietly emerging alternative strategy of all. At this point in time a number of companies are gingerly "putting their toes" into the educational profit water by opening day care centers for preschool age children. It is too early yet to do much more than note this development. One might predict, however, that if this movement is successful--and profitable--we may see "franchise schools" in the decade to come.[17]

The "new school," "storefront school," or "free school" has rapidly emerged as an interesting alternative to public schools during the past several years. So many of these schools have emerged, in fact, that a book, Rasberry Exercises - How to Start Your Own School, has enjoyed considerable notice (106). Peter Martin, in commenting on Rasberry Exercises, expressed something of what the "new school" movement is all about:

> We cannot settle yet for what we have discovered, even in our own alternatives about ourselves, or childhood, or schooling. We have only just started finding out.... If we define ourselves now, too neatly, too simply, we will do a disservice to ourselves and reality and the young we mean to help. We will become too tribal and smug too soon. Words and rhetoric will again begin to take the place of raw experience, of "doing it." (87)

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[17] See, for example: Featherstone, Joseph. "The Day Care Problem--Kentucky Fried Children." The New Republic, November, 1970. Mack, Herbert and Ann Cook. "Business in Education--The Discovery Center Hustle." Social Policy, Vol. 1, No. 3, September/October.

In essence, most of these schools grew out of the feeling that public schools have either failed miserably in providing basic education or that they are almost totally "dehumanizing." Further, they suggest that anyone who has his own "philosophy of living" or life style should collaborate with others of similar beliefs in educating their own children in their own schools so that these children will not be forced to conform by "establishment" schools. In particular, there are many free school proponents who advocate models similar to the well known Summerhill of A. S. Neill (34).

Mass Communications.--One of the serious mistakes we make in the consideration of education is to confuse it with schooling. The two are not synonymous. Much human learning, if not most, takes place outside of formal school settings. An emerging educational change strategy, that of using mass communication, or the media, is beginning to take shape in this nation. There is interest in and investigation of home learning through television cassettes and through direct home dial access systems. Many educational television stations broadcast bilingual or second language education programs. And of special note has been Sesame Street, the nationally televised program directed at reaching pre-school age children. Many of these developments, and many similar ones which have not yet appeared, will be worthy of consideration and support as strategies for change.

Finally, there are those, particularly in Catholic circles, who are suggesting that one significant role of established private schools should be to serve as innovative models for public education (100). Since much that goes on in private education is often a poor replication of public schooling, these enlightcated leaders are calling for a new perspective in their schools. Added to this, the private schools are suffering severe financial problems, and a new approach is seen as one way of justifying the very existence of private schools: they must provide alternatives.

B. Assumptions

The basic assumption underlying all change models presented in this section is that we need alternatives to the public school system. Further, it is assumed that competition will improve the quality of all schooling.

More specifically, guaranteed performance programs and franchise schools assume that business, with its management skills and profit motive, can do a better job than many, if not most, public schools. Further, there is the notion that teachers will improve professionally and learning will increase if teachers are held strictly accountable for that learning. Also, it is felt that the involvement of business in schools will cause them to become open systems, and thus call on outside help when needed (79). Finally, it is assumed that guaranteed performance contracting will allow school systems to experiment in an orderly, responsible manner with low costs and low political risks because an outside agency is experimenting within the system according to the needs as described by the system (79).

Assumptions which undergird the voucher system are listed as follows:

1. Society has an obligation to provide compensatory funds for the education of "difficult" students: i.e., students who are difficult to teach, who find learning difficult or whose educational needs are more expensive than those of

the average student.

3. Parents are dissatisfied with the public school system; i.e., public schools have not and will not provide quality education for all groups.

a. Vouchers will enable parents to take individual action if they are displeased with a school. Under the present system this is not usually possible.

b. Parents are able and willing to choose from among educational alternatives for their children.

c. Increased parental control over the kind of school their children attend will increase parents' involvement in education for their children, and this involvement is desirable.

d. Putting money for schooling into the hands of parents will be a better use of funds than channeling the money through currently existing federal, state, and local agencies.

e. Parents will choose to educate their children in an educational institution (rather than hiring a tutor, etc.).

4. Bad schools will go out of existence, or out of business.

5. The education market can be regulated by legislation.

6. The plan will encourage the establishment of new schools.

a. Some parents will create schools reflecting their children's special needs.

b. educators wanting to experiment will create new schools.

c. entrepreneurs who think they can teach music, dance, and designs will have an opportunity to do so.

The "new school" movement assumes, basically, that pluralism in all walks of life, including education, is of utmost importance to our society.

There are a number of other assumptions:

1. A growing number of parents will refuse to send their children to traditional schools--public or private.

2. Parents will financially support new schools for their children.

3. Parents desire more development of affective and physical communication skills for their children.

4. The present school system is cognitively oriented and will not change.

5. [illegible]

6. The individual school is freer to develop in its own way than a school that is part of a system.

7. The individual school is continually in a process of adaptation, flexibility, innovation, and movement.

8. There is no one type of "new school"--each will be unique and have a particular self image.

Two assumptions arise from the so-called mass communications message. The first has been mentioned: much education occurs outside of schooling. The second is that there is value in learning taking place in a family environment with children and parents interacting.

III. Limitations

One general limitation of all alternative strategies is that the American people have always had a deep faith in a tax supported, free public education system. This system has become so entrenched in our society that competing with it is extremely difficult, as private and parochial schools have found.

Since the Guaranteed Performance Contract usually lasts for just a few years (1-3) there is a chance that the Hawthorne effect may come into play in producing significant short-term results (104). Only a study of the effectiveness of the "turnkey" program (i. e., the absorption of the innovation into the permanent system) could provide data on this possibility.

Furthermore, GPC is geared towards remedial needs of disadvantaged or difficult to educate students. Therefore, at present, it would only be advantageous for a rather small minority of the total school population (about 15 percent). As described in various reports, GPC takes over where the school has "failed," i. e., with students who are below grade average.

Since GPC relies heavily on measurable results, only those skills that can be measured within a tolerable range of accuracy and reliability would be appropriate (74). Present problems with measures of achievement place serious limitations on GPC.

In addition, there are various limitations on any given instructional program because of individual differences.

Other problems inherent in GPC are: the difficulty school systems would have in obtaining development capital from government agencies; the problems created by the need to coordinate and communicate with local school boards, the management support system, the firm, the independent auditor, and the professional school staff; and the "after effects" of an unfortunate experience with a firm or the difficulty involved in trying to maintain high achievement after the contract (with its incentives, rewards, and support) has been terminated (81).

Limitations and problems for the voucher plan are listed as follows:

1. Competition could encourage high pressure salesmanship practices in the schools and what the NEA and AFT call the "enrichment of private sector hucksters."

2. Instead of more alternatives, vouchers may produce more similarity in the schools because of (a) restrictive legislation or (b) parental pressure groups.

3. Vouchers may not really benefit the educationally needy; money from compensatory vouchers will go to the school, but it will be difficult to determine whether the money is really spent on the children who need it most.

4. Parents may get more control over the schools, but their control may not result in better quality of education; i.e., the hiring of better administrators or teachers or the adoption of an innovative school program.

5. Bad schools might continue on as the last dumping ground for those that are difficult to educate. A lot of compensatory vouchers may be available to the school, but the school may not be able to attract good administrators or teachers.

6. It will be difficult to legislate without being restrictive. It will also be difficult to legislate to the satisfaction of racial and religious groups.

7. Although we may have new schools or more schools, there is nothing in the voucher system that insures that the schools will be better schools.

Two severe limitations plague the "new school" movement. First, they have severe financial limitations and as a result have difficulty in staffing, housing, and obtaining materials and equipment. Unless this can be remedied, they will only be able to serve the children of parents who can or will pay high tuitions. On a visit to Summerhill in England in 1966, shortly before its closing, one observer noted that the student body was made up largely of American children and youth with severe emotional problems who had been "unloaded" by their affluent parents--an almost insidious form of segregation.

Second, since these schools are in various stages of development, it is difficult to get information on their effectiveness. Many of them seem rather casual about how their programs can be evaluated.

Limitations on private and parochial schools, even those which do become experimental, will continue to come from the fact that they appeal primarily to only specific groups in the society. There will always be resistance to funding such schools from general support funds.

There are probably few limitations which can be expressed for mass communications strategies at this time, since they have not really been adequately tested. However, one problem may be appearing. That is, not all of the results which are in really attest to the values claimed for Sesame Street, for example. Herbert Sprigle points out, in his research on this program, that although eight million dollars went into this program, "it has had little effect in preparing poverty children for first grade." (125)

Returning to generalization, the overriding concern with all alternatives as a strategy for educational change is that while they strive for the development of pluralism in society they may create more than we bargain for or can handle. Art Seidenbaum, columnist for the Los Angeles Times, expresses the concern well in an article entitled "Pluralism in Education":

> . . . In California today, many schools are needed, as many as there are groups to begin them and students to enjoy them.
>
> I believe in that, too. And I'm sure most of the . . . . new schools want to offer pluralism or alternatives or rolling classrooms--methods a public system might adopt if it didn't have to beg with both hands while sitting on its bureaucracy.
>
> The best thing about private schools is that they can set public examples. Some do. The worst thing about private schools is that they can take a sheltered child and shut him snugly away from society.
>
> But the present private explosion, whether the new schools live or not, is already a measure of the number of people willing to take education away from the system and into their own hands.
>
> This makes them accountable, to use a presently fashionable school term.
>
> Maybe this will make the system responsive for its own survival sake, now that parents and teachers are dropping out, following in the footsteps of their children. Decentralization of the public schools is still an issue. Disintegration becomes a possibility (111).

IV. Example

There are countless examples of "alternative" change strategies, as set forth in this section. Many are well publicized. The following is an example of government performance contracting, less publicized, but from actual practice:

> In September [of 1969] the Gilroy Unified School District (GUSD) entered into a performance contract with the Westinghouse Learning Corporation (WLC) to provide reading and math instruction to approximately one hundred students in one elementary school. The ESEA Title I target students in grades 2, 3, and 6 were selected for the program.
>
> Some of the specific features of the project included:
>
> . . . The school district made classroom facilities available

to Westinghouse for the purpose of conducting the activities related to the contract.

. . . WLC assigned an on-site manager, one secretary, and three aides to the center.

. . . The Gilroy Unified School District assigned one full-time teacher to the center with support services from the building and district administration.

. . . WLC furnished all instructional materials and equipment.

. . . WLC accepted all Title I students who would qualify for a regular classroom in the Gilroy Unified School District, i.e., M.R. and E.H. students would not be placed under a performance contract.

Unique to the performance contract that was signed with WLC were:

. . . Each student assigned to the center will have an objective of achieving not less than 1.0 achievement years in reading and math.

. . . Each student must accomplish the 1.0 achievement in a subject within 120 hours of instruction.

. . . The school will conduct the testing program using nationally standardized tests.

. . . The payments to WLC will be based on the results of [illegible] administered by the school district.

[illegible] school district will provide sufficient enrollment [illegible] center so that WLC will have the opportunity to [illegible] 300 achievement years.

[illegible] standard price for an achievement year is [illegible]

. . . If all students in the program average more than 60 hours per achievement year per subject, the price of $108.75 will be reduced proportionately.

. . . If any student fails to accomplish at least a 1.0 achievement year in a subject in 120 hours the school district will pay nothing to WLC for that student's work in that subject.

. . . All achievement beyond the 1.0 objective by any student will be at no cost to the school district.

. . . If the school district elects to enroll students in the program for more than 400 achievement years, additional achievement years will be provided at a cost of $75.

. . . Monthly progress payments will be made on an assumed gain formula to be arranged between WLC and the school district.

Results thus far are inconclusive. A significant sample of the project students produced the following results in reading:

1. In word knowledge skills the second graders grew one month for every month in school.
2. In word discrimination skills the second graders grew two months for every month in school.
   --In 1969-70 the average Title I second grade student grew .5 month in reading for every month in school.
3. In word knowledge skills the third graders grew one month for every month in school.
4. In reading comprehension the third graders grew 1.47 months for every month in school.
   --In 1969-70 the average Title I third grade student grew .7 month in reading for every month in school.
5. In word knowledge skills the fourth graders grew one month for every month in school.
6. In reading comprehension the fourth graders grew one month for every month in school.
   --In 1969-70 the average Title I fourth grade student grew .5 month in reading for every month in school.

At the conclusion of the school year the sample was retested and essentially the same results were obtained. Although in the spring, the program was changed to reduce the number of children in the center at any one time, and to reduce the number of hours each child attended the center.

In addition to the changes described above it was necessary to alter provisions of the basic contract for the post-240 hour period. The time remaining for each child was dependent upon his attendance in school, and it proved almost impossible to relate to the 120/240 hour contract provision on an individualized basis. The Gilroy Unified School District agreed to pay WLC for achievement gains measured for the post-240 hour period in terms of achievement years for each child based on ten percent of the achievement year rate.[18]

V. Decision Making

In general, the entire movement to provide "alternatives" in education is directed at getting educational decision making away from the professional education establishment and into the hands, ostensibly, of parents—or of businessmen, or of religious leaders.

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[18] This example was adapted, in total, from a description prepared by Dr. [illegible], Superintendent of Schools, Gilroy, California.

Within the framework of performance contracting as described by Lessinger (79) the broad areas of decision making and makers are as follows:

	Decision	Decision Maker
1.	educational goals expressed in terms of desired learner achievement	local school board
2.	means for achieving the desired educational goals	contracting firm
3.	conditions of the contract	worked out by local school board, management support group, firm, and funding agency
4.	selection of an independent auditor	local school board and contracting firm
5.	evaluation of results in terms of learner achievement	independent educational accomplishment auditor

Within the Office of Economic Opportunity voucher plan proposal decision making would be as follows:

1. OEO decides which voucher plan will be acceptable.
2. Parents decide which school they want their children to attend.
3. Schools decide what their program will be like.
4. EVA decides which schools are acceptable as voucher schools.

While the placement of decision making in many places—parents, schools, government, and so forth—is a desirable thing, the essential question is, "Who makes what decision?" What of the public policy or public value question? What of the quality of instructional decisions? As with other strategies, decision-making is far from clarified.

VI. Potential

The major potential of all models within the "alternative" strategy is that it does allow for freedom of choice or pluralism. Further, it provides competition and the potential for the development of new ideas for the establishment system, public education.

The competition and so-called "accountability" features of guaranteed performance contracting seems to be offering the schools some much needed help in terms of effective teaching of basic skills. This help seems to be in the form of money, support for management, instructional programs, and evaluation, and knowledge of results in terms of student achievement. If GPC firms deal mainly with the problems of re-educating the "failing student" in basic skills, there will probably be little effect on the total school program; on the other hand, if GPC really catches on and more and more tax support is given to the teaching of the basic skills for all students, GPC could eventually change the whole concept of schooling, i.e., schools might become places where paraprofessionals assist in the teaching of basic skills and professional teachers might become more and more specialized in some area of the arts, sciences, or humanities and be employed in various learning centers in the community. GPC has the potential to become a powerful force for change in relation to American schooling.

In summary, the positive and negative aspects of GPC are:

Positive

1. If schools produce better results in terms of educational achievements, the public might be willing to give more tax support to schools

2. If teachers' salaries were partly based on results in terms of student achievement, motivation and competition might produce more effective teachers

3. If the school program were viewed in terms of what the student can do instead of in terms of the growth a student gets for "going through" a course, students might be beginning and finishing phases of schooling at different times and rates of speed--as a result, grades, grading, and failure would disappear; individualized instruction, mixed age groups, and a variety of new schedules might emerge

Negative

1. If contracting firms produce short-term results that the schools cannot maintain, the public may be even less willing to support the schools through taxes

2. If contracting firms can produce effective results that teachers cannot maintain or that do not require the services of a professional technician, the teaching profession itself may go out of existence and be replaced by a group of paraprofessionals who can provide a "humanistic" atmosphere for the implementation of programs--schools may become more and more a place where the "skills" are learned and other learning common for the area will be set up (and only with, for instance, humanities--sort of "an elite" kind of learning)

3. If contracting firms produce results in one set of circumstances, these results might be overgeneralized to cover a variety of assorted circumstances with very unfortunate results (kind of a continuation of the search for the panacea); successful firms could form a monopoly and we would wind up with a single learning device for all students--sort of a programmed "Dick and Jane" generation

Succinctly, the contract plan can be viewed in terms of its positive and negative features.

1. competition could promote a diversity of alternatives in elementary education

2. organized parental pressure groups could exert pressure on schools to meet the educational needs of their children

3. vouchers could make it possible for many schools to experiment and conduct research to improve the schools that would attract personnel from private schools and university-related schools

1. competition could produce high pressure propaganda tactics especially from profiteers

2. organized parental pressure groups could exert pressure on schools to conform to some rather than to conceive of innovative patterns and schools with a more traditional pattern could create a monopoly

3. vouchers could produce more conformity in the schools because it would be risky to experiment and innovate

sometimes it takes a long time for the good effects of an innovation to become apparent

parents might withdraw their children from schools that could not "prove" the innovation was better

If, in fact, the voucher plan works out as proposed, it seems safe to conclude that (1) parents would be more involved in deciding where their children will be educated, and (2) funds would be available to reward schools that are willing to educate the disadvantaged. However, there does not seem to be any guarantee that the voucher plan will encourage more innovation or change in the schools. In view of the possibility for innovation and change that the voucher plan could provide, perhaps it is worth a try. Some reasons for giving it a try might be, e.g.: (1) there is growing dissatisfaction with the public schools, (2) the past experience with the U.S. education bill, (3) the present trend toward accountability in the schools; and (4) competition and free enterprise are a part of the American system.

The potential of mass communication is unlimited, and seemingly untouched. If the private sector were to invest in such a system as Sesame Street, much might accrue. However, they do not seem willing to do so, largely because the American public perceives, in the final analysis, no more other than educational programs. And producers "only sell what people use there."[illegible] Evidently, the use of the media for educational purposes will have to be removed from the marketing perspective if it is to change. Perhaps a model exists in BBC or CBC. A careful government funded network might compete well.

Perhaps such strategies as suggested here will prove to be reasonably worthwhile. Perhaps they will not. They all deserve merit and support in our search for quality education and the provision of equality of educational opportunity for all of our citizens.

Peer Group School Process Strategy

1. Rationale

There are two major parts to this strategy. The first part concerns the kind of intervention that is used; the second part concerns the direction of the intervention.

First, rather than treating each school individually, the intervention treats a group of schools identifying itself as a group. The basic idea here grows from an extension of the concept of peer group socialization (8). The phenomenon of socializing, or resocializing, an individual to a new behavior through the identification as a member of a peer group is well known. A classic paper by Lewin demonstrates the power of the group (80). This strategy treats a school staff, not an individual, as the unit to be resocialized, and accomplishes the process by developing a group feeling among a number of schools. When the strategy is successful, a school staff takes on the new behavior which is expected of it as a member of this group.

This rationale determines the relationship between the schools and the outside change agent. It is easy to document the past failure of interventions based upon creating a dependency relationship between a school and an outside expert. There is also evidence, for reasons cited here, of the typical professional loneliness of the adults who work in schools (114, 115). Putting these two phenomena together with the power of peer group socialization leads to the concept of the interventionist as a facilitator of interaction among school staffs. The strategy relies centrally on the decision [illegible] that the schools consent to the though the interventionist may walk away. The support that is developed for the school staffs comes from other school staffs, the people who are going to be around for a long while. In this strategy, the outside agency is referred to as an "interventionist," in order to describe the role accurately. The "change agent" role may be shared by a number of people, but in any case can really only be identified after the change has occurred.

The support offered by the peer group is moral support--very important to the lonely teacher and principal--and also the support of a great pool of additional resources, to which each school in the group has easy access. When schools form the habit of discussing common problems and helping each other out, the power of the resources that reside in the group becomes apparent. The reward that comes from membership in the group is meaningful then in basic professional terms: a school feels that it has company in trying the new behavior and it has more help available in doing what it wants to do. There is a better chance that tomorrow will be a more satisfying day. Because of these potential rewards, a school values its membership in the group, and it will attempt to conform to the expectations that are held for group members. The desire to conform is, of course, the avenue by which resocialization can occur.

The new behavior which the schools take on as members of the group could be any of a wide variety of behaviors. The most common goals of past interventions have been specific changes in curriculum, instruction or problem-solving techniques, and any of these behaviors could conceivably be developed as an expectation for member schools in the new group. That is, the intervention would consist of developing peer group pressure to promote the specific change.

If such a specific change were the objective, it would be necessary for some component of the intervention team to provide the first input and direct stimulation focused on the specific desired behavior. Thus a peer-group intervention strategy alone does not prevent the change agent from behaving, at least initially, as a kind of expert director.

The second major part of this strategy, the goal of the intervention, is based on the assumption that a resocialization of schools directed toward self-renewal should focus on some behavior that is (a) central to the working of all schools; and (b) inherently capable of changing itself. There is ample evidence that piecemeal innovations in content or process tend not to make much difference, and that the specific changes which are needed vary greatly from one school to another. This strategy proposes that the common denominator for all schools lies in the staff's attitudes toward and use of processes of dialogue, decision-making, action, and evaluation. In some form or other, these processes occur in every school; the processes are, in fact, the means by which the school copes, for better or for worse, with its problems. We will refer to these processes as DDAE.

The DDAE component of the strategy calls for an intervention which attempts to make the group of schools more aware of DDAE processes. In this strategy, the interventionist is not a person who has any kind of answers; he simply encourages the schools to get together to discover and share their own problems and to establish ways of helping each other find solutions to those problems. Schools discuss together the problems they face and what they do about them. They talk about their successes, failures, uncertainties, what they wish they'd done. Self-consciousness about DDAE, not some kind of predetermined "good" pattern of DDAE, becomes a major expectation for group members. The interventionists do not teach content or process; they continually focus the schools' attention on how things are getting done and could get done in schools. Two points of emphasis in this strategy should be made clear. First, the entire school staff as a unit is considered--not principals on the one hand and teachers on the other. Second, the single school, not the school district is the unit to be changed.

In this scheme, the resocialization of a school is accomplished through (a) peer group pressure on a total school staff to consider consciously their ways of coping with school problems, and (b) peer group assistance to the school staff in defining and solving those problems. The peer group of schools thus offers its members the moral support and expanded resources that are essential to try alternative solutions, and through the same interaction, provides a continual source of outside perspectives and an informal but powerful surveillance which tends to prevent a school from settling, unthinking, into any single formula of operation.

Schools successfully resocialized as members of such a group might fairly be called self-renewing.

II. Assumptions

The assumptions that underlie this perspective can be described in two major categories. First, there are the assumptions that dictate the basic rationale of the strategy. Second, and most important, is a central assumption about how the transmission of knowledge must occur in a world of self-renewing systems.

The assumptions behind the basic rationale are:

1. Resocialization can occur in a peer group of schools that identifies itself as such. Two levels of resocialization settings are posited in this strategy.

a. Individuals can be resocialized in the staff group of a single school. For this there is abundant support available in the literature on adult socialization, particularly professional socialization (15, 16, 103).

b. Resocialization of an organization (e. g., a single school) can occur by establishing that organization as a member of a peer group of organizations. While the notion of "socializing" an organization is new, there is considerable evidence of an organizational identity. (For example, the concept of organizational climate has been widely studied [49], and the importance of interschool exchanges of information has been noted [142].)

2. Valuable resources (personnel, materials) exist in all schools and can be identified.

3. The resources that exist within a group of schools can be made easily accessible to all member schools through informal communications about the problems and the interests of principals and teachers. Little, if any, formal allocation of these resources is necessary.

4. The ready accessibility of these shared resources will tend to prevent the growth of competition among the schools in the group.

5. Continuing communication within a peer group of schools about their daily life is perceived as meaningful and non-threatening. It helps each school formulate and deal with the problems it faces. School staffs perceive

different problems and the same problems differently. Communication of these different perceptions will tend to sensitize each school to many possibilities in problem identification and solution. In such a group there is greater likelihood that the same process will also occur within the individual school. That is, the different perceptions of individuals will tend to keep the staff from homeostasis.

6. Healthy disequilibrium can be instituted within schools by developing norms that call for continuous evaluation. These norms are encouraged by the continuous interaction in the peer group, which, in a sense, forces each school to justify to peers why it does what it does. This leads each school to a more careful specification of its problems and to informal consultation among peers about the effectiveness of solutions that have been tried.

The conceptualization of the interventionist as simply a facilitator of interaction among schools grows from a view of the process of knowledge transmission that is radically different from the view that is assumed in all of the other change strategies. The conventional model of the way in which knowledge is disseminated defines a producer of knowledge on the one hand and a utilizer of knowledge on the other. Havelock shows the accepted one-way relationship between the two. (See Figure 10.)

Even though there is much more literature on the importance of feedback from the user to the knowledge producer, and numerous suggestions about ways in which the two can come to a better mutual understanding (see the section on the Problem-Solving Strategy), the basic model remains. That is, the world is divided into two relevant sets for any change strategy--those who produce or have knowledge and those (in this case, schools) who use it or should use it.

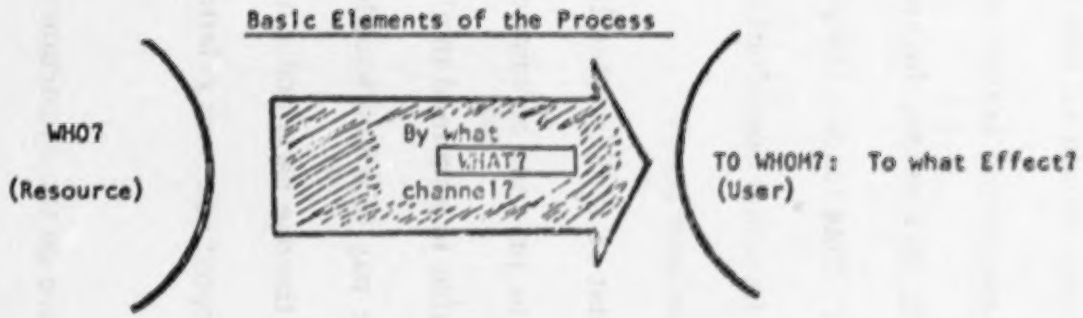
Basic Elements of the Process
WHO?
(Resource)
By what
WHAT?
channel?
TO WHOM?:
(User)
To what Effect?

Figure 10.

Basic Elements of the Process
(17, p. 1-10)

This view is the basis for all strategies which posit an outside change agent (or an inside agent who has somehow been properly trained).

The peer group-school process perspective starts with a very different picture of the world. In this new picture there are many systems--individuals and organizations of varying complexity--each one of which is simultaneously both a producer and a user of knowledge. The relevant systems for our purpose here are schools, which are linked together in a group which maximizes the two-way flow of knowledge and problems among them. (See Figure 11.)

This conception of a situation in which schools look to one another as peers for new knowledge that will help them cope effectively with their problems flies in the face of deep-rooted beliefs about the critical role of expert repositories of desirable knowledge. The challenge to the conventional picture is intentional. There is growing awareness that new mental pictures of the human world are needed as guides if we are to have a future at all. A recent statement of this necessity emphasizes the fundamental importance of changing the premise that ". . . the summed knowledge of experts constitutes wisdom" (126, p. 9, pp. 17-18), of somehow creating situations in which all people participate in gathering and disseminating knowledge (126, p. 36).

The crucial assumption, then, of the peer group-school process perspective is that the schools themselves are the most useful sources of knowledge for one another. This is not to say that the schools are the only sources; the last section of this paper will describe how this perspective takes into account the existence of other expert-based strategies. But the focus of this strategy comes from the belief that schools produce knowledge about their own work, that this

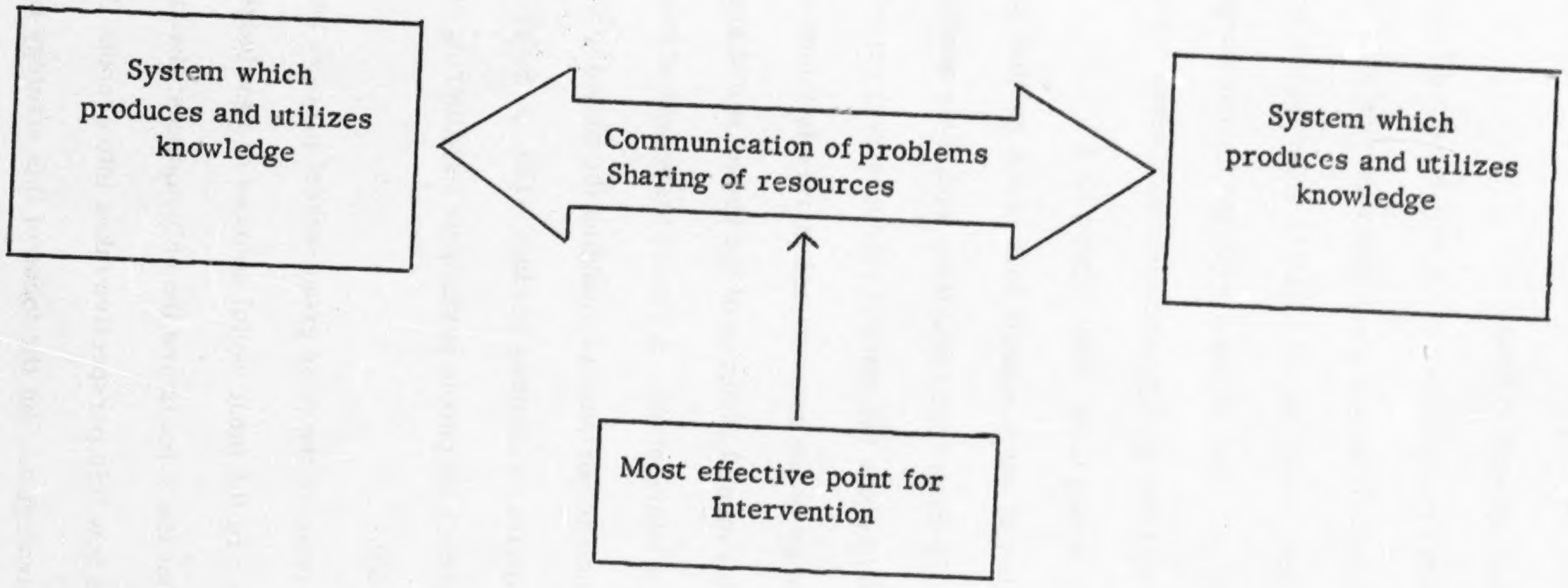
System which produces and utilizes knowledge
Communication of problems
Sharing of resources
System which produces and utilizes knowledge
Most effective point for Intervention

FIG. 11. Transfer of Information -- Another View

knowledge is useful and can be disseminated to other schools. A few other writers have noted that a great deal of knowledge is produced by the practitioner and that it remains, for the most part, hidden (83, pp. 349-350).

III. Limitations

The problems and limitations of this kind of strategy are, of course, primarily a result of its entirely different point of view. These difficulties can be thought of as those which attend the development of different attitudes and expectations, and those which arise from requirements for different kinds of activities.

The major problems associated with adopting the view of schools as consultants for one another have to do with modifying certain role expectations.

1. There is a strong tendency to maintain the expert-client relationship between the interventionists and the schools. The roles that have been learned by school people and by professional consultants make this relationship comfortable. To change the relationship may require a basic modification of the teacher role (63, 122) and a resocialization of the interventionist.

> We are apparently victims of years of schooling which have continually reinforced the notion that if we ask around long enough, we will find someone with superior knowledge who can, with relative ease, offer solutions to our problems. So, we see school staffs waiting to be told what to do. Even after they have grappled with and solved together their problems at one stage, when they move to another stage of development, the tendency is first to revert to the search for an expert answer. So, too, we see the experts eager to tell the schools what to do. Most of those who play the interventionist role have a true commitment to helping schools improve, and an honest belief that they can be of most help by imparting to school staffs, in one way or another, some kind of "higher-level" information.

> Indeed, school staffs do need to gain perspective on their problems, do need to learn a variety of new skills, but our observations have been that the breakthrough insights that result in truly changed behavior in principals and teachers usually come from sharing information with others who they know face the same daily situation that they do. It is unfortunate that many who play the role of expert-interventionist perceive such exchanges as mere exercises in "pooling ignorance"--as if their own usefulness depended upon the existence of ignorance in others. An instructive image to keep in mind is that of the interventionist-as-teacher, a teacher who has the skill to arrange opportunities in which learners can draw their own generalizations by comparing their own experiences with other clearly relevant experiences, who has the patience to wait until these generalizations are drawn before he attempts to input generalized information, and who has the sensitivity (and humility) to recognize valuable sources of information in whatever persons they may occur. (9, pp. 24-25.)

2. It is difficult to treat a whole school staff as a unit in interschool activities. Traditional roles call for separate activities for principals and for teachers. This strategy, however, calls for each staff to acquire an orientation toward their total school organization so that each individual sees himself as a representative of a school which belongs to the peer group.

3. It may be that the schools in the group with which the intervention is concerned also see themselves as members of other groups. If the expectations of the other groups are opposed to creating awareness of and experimenting with DDAE processes, then the schools are faced with conflicting demands from different reference groups. [This phenomenon has often been described at the level of the individual; e.g., 14.] The problem for the interventionist is to keep the target peer group alive long enough for the rewards that it offers (i.e., peer approval, accessible resources, professional satisfaction) to become dominant in the eyes of the member schools.

Other problems arise in the mechanics of carrying out interschool contacts.

1. There is often difficulty in finding time for teachers to attend meetings and visit other schools. After-school meetings may be a great drain on energy; released time may not be formally granted; schools will vary in the ingenuity with which they make informal arrangements to release teachers. Since it is usually easier for principals to get away from school, there is a danger that the peer group will become *simply a group of principals* rather than a group of schools.

2. Geographical distance sets some limits for face-to-face contacts among schools. Just what these limits are, however, is not clear; nor has there been much exploration of the effectiveness of contacts via other media of communication (e.g., newsletters, tapes).

3. Specific learning may be necessary to develop the problem-solving skills that a school staff may need as it works on its own DDAE processes. Questions arise about when and how to provide resources for the peer group to use in improving problem-solving without usurping the prerogative of the group to proceed in the ways it deems best.

Since the peer group-school process perspective is the most recent to appear on the scene, it cannot offer extensive empirical evidence of its effectiveness. The success of the project to be reported in the following section warrants further testing of the strategy in a variety of settings. It is probable that such testing will explicate some of the problems that have been listed, and will reveal some new ones.

IV. Example

The complete peer group-school process strategy has been studied in only one project so far. It should be made clear at the outset that the strategy (as it has been described above) was developed throughout the five-year course of this project, rather than first conceived of in its entirety, then applied. The project was the Study of Educational Change, conducted by the Research Division of the Institute for Development of Educational Activities (|I|D|E|A|), from 1966 through 1971. A few preliminary reports describe parts of this project (e.g., 9, 64), and complete reports are in press.

The intervention was carried out by staff members from the Research Division of |I|D|E|A| in 18 elementary and intermediate public schools in Southern California, all of them within a 150 mile radius of the |I|D|E|A| office. Each of the schools was a member of a different school district, and together they formed a fairly representative cross-section of American schools on variables of socio-economic level, ethnic makeup, rural-urban characteristics, mobility of population, staff characteristics and type of school plant. The group was called the League of Cooperating Schools.

The Intervention

During the first three years of the project, while the rationale of the peer group-school process perspective was growing and parts of it being tried, the staff also used a number of different strategies of the social-interaction and problem-solving types. In the last two years only the peer group-school process approach was used. This two-stage operation caused certain problems in the last two years that might not loom so large in a project that did not have to reconcile the new strategy with its own intervention history. It seems reasonable and informative, however, to view these problems as magnifications of those that can be predicted any time the intervention strategy does not fit the picture held by the schools and by the interventionists of what their relationship ought to be.

The major intervention activities and the problems of the fourth and fifth years of the project are briefly described as follows. (A list of suggested activities has been generalized from this experience [9].)

1. Regular Meetings of Principals.--For all five years the principals met all day once a month during each school year, and the meetings were very well attended. At the beginning of the fourth year, the principals were told that the interventionists would no longer determine the content or procedures of these meetings, as they had largely done in previous years. The principals found it hard to break the habit of turning to the intervention staff for direction, but they were able to verbalize their difficulties. Before the end of the fourth year they were taking control of the meetings, but they never managed to break completely the pattern of expecting the intervention staff to handle the mechanics of calling and reporting meetings.

The danger of creating a "principals' club" rather than building a peer group of schools was obvious in this project. The principals soon began to provide very satisfying support for one another as leaders of odd-ball schools. While this peer approval effectively instilled in most of the principals an experimental orientation toward DDAE processes, it was accompanied by a tendency to look upon League principals as an exclusive group. It was difficult for the interventionists in the last two years to persuade the principals that it might be useful to have teachers attend some of their meetings, even though the principals were not at all reluctant, by that time, to share school decision-making with their teachers. Gradually, teachers were invited to attend some of the principals' meetings, and in the last two meetings teacher representatives were sent in place of a few principals who could not attend.

During the first three years the interventionists provided various types of input for the principals' meetings, but at the beginning of the fourth year the principals were asked to spend their time discussing the problems that the League schools faced. Soon afterwards, the intervention staff asked them to work out with their teachers what they felt were criteria for effective DDAE processes in their schools. The development of these criteria became a major project. The principals created a first form of a questionnaire, which was then discussed with and revised by League school staffs. Finally, the League staffs responded to their own questionnaire and discussed the resulting data.

During the fifth year the principals took on the job of producing a paper which described the group's ideas of how a truly "accountable" school district would be constituted. This choice was certainly influenced by the high visibility which mass media and their own communities were giving at the time to questions about the accountability of schools. Throughout the year their meetings were spent in sharing ideas, writing drafts of the paper, and reporting what happened when they tried experiments in changing traditional lines of authority. The paper was left at the end of the year in the hands of the intervention staff for final rewriting (143).

2. Regular Meetings of Teachers.--There was no group of teachers that met regularly throughout the project. This was probably a serious deterrent

to building school staff identification with the League. When, however, in the fourth year a teachers' group was formed (one person chosen by each school), it quickly took charge of its own activities, and its numbers, in general, tried to represent the thinking of all the League staffs. This group had the job of planning activities which the League teachers wanted. They organized a League orientation meeting for new teachers, a number of meetings at different schools, an all-League conference and a series of Saturday morning workshops on topics suggested by teachers.

Early in the year this group also decided to write a monograph, drawn from the problems and joys experienced by League teachers as they attempted to try out new ideas in their schools. The year-long effort was heavily oriented toward a feeling of membership in the League group, and the monograph was finally published. (19)

In the fifth year the teacher activities group continued, and again carried out an orientation meeting at the beginning of the year, an all-League Conference in the middle of the year, as well as various interest groups, which were requested by teachers who wanted help on specific problems. As a grand finale for the project, the teachers' group and representatives from the principals' group jointly planned a League Week, during which there was a great amount of interschool visiting, and which closed with a gigantic League party.

A second teachers' group met several times during the fifth year. These

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[19] *Tell Us What to Do! But Don't Tell Me What to Do! Changing Teachers Talk About Themselves.* Los Angeles: Institute for Development of Educational Activities, Inc., 1971.

were the teachers in each school who acted as research assistants in the field for the |I|D|E|A| staff. Their job was to report information on the DDAE processes in the schools, and they met to discuss the reporting forms that they would use.

A persistent problem with the teachers' groups was the difficulty in getting teachers freed for meetings from some of the schools. As time went on, however, it became apparent that ingenious solutions could almost always be found if the meeting commanded enough interest.

An insight that should not be ignored also emerged. The purely social activities that attended many of the League events were extremely important in building identification with the new group. The project records contain a large number of reports of informal exchanges about problems and possible solutions that occurred during the social hours.

3. Interschool Visits.--Visits by teachers and principals to other schools in the League was a key activity in building group identity and in emphasizing the value of the resources that the schools could offer one another. While some visiting took place from the first year, its importance and frequency increased in the last years. At the beginning of the fourth year an inventory was taken by the schools of the resources they felt they had. These were used by the interventionists to answer requests for help. Later during the fourth year teachers on several occasions discussed ways in which they might make their visits more satisfying for both the host school and the visitors.

In the fifth year the interventionists became aware that many interschool visits were being initiated and carried out entirely by the schools. When help was requested from the interventionists, it was usually help in locating and contacting

League people who might have experience with a newly discovered problem. The culminating activity of the project was a two-week League visiting program in which each school offered to demonstrate to visitors its work in a particular area of interest to the staff.

Interschool visits are an obvious strategy to use in developing a feeling of mutual assistance in a peer group of schools, but it is important also to note the relationship of the interschool visits to the component of this perspective which calls for work on DDAE processes as the goal of the intervention. The immediate purposes and results of the visits were usually couched in terms of curricular or instructional matters, but the ways in which the visits were planned, carried out and reported to school staffs brought considerable attention to DDAE processes in the schools.

Two difficulties for interventionists became clear. During the early years of the project, the intervention staff had favored a few schools as the places to visit, and this created a problem in the attempt to develop a group of peer schools.

> The interventionists must walk a fine line between using competence within some group members to serve as a resource to the other group members and inadvertently creating a 'star' system in the group. If high level performance in some schools is pointed out too much too early by the interventionists, those schools tend to be viewed by the other group members as teacher's pets, and the development of total group interdependence is discouraged. . . . This is not to say that effective peer groups do not have members of higher and lower status. The point is that the status of a member school must come from judgment by its peers of the value of its performance, not from the premature approval of some schools over others by interventionists.
>
> The League project has also suggested that a simple arrangement in which the more highly developed schools help the less developed schools is not always the most effective tactic, even for improving skills in performing new behavior. Sometimes it is more effective to arrange an exchange of information between schools that see themselves as similar in some way. (9, pp. 27-28)

The second difficulty had to do with the great variation in the principals' responses to the idea of visiting other schools. A few invited League principals to critique their schools, a few asked for visits for specific help, some appeared reluctant to visit. In the last year, however, all of the principals did an informal self-assessment of strengths and weaknesses, which was used as a basis for planning future (after the project) contacts that might be helpful.

4. Newsletter.--During the first three years a slick newsletter with a very broad educational slant was distributed by the interventionists two or three times a year. At the beginning of the fourth year the newsletter, Changing Schools, was changed to an inexpensive format, concerned exclusively with League affairs, and distributed about every six to eight weeks. Teachers and principals were encouraged by the editor--a member of the |I|D|E|A| staff--to write for this newsletter, and by the end of the fourth year, their contributions made up almost all of the content.

The content of the newsletter was directly related to both parts of the strategy. Focus on DDAE processes was stressed in reports about the development of the League criteria for DDAE (see Assumption 1. above) and about the concept itself. Identification with the League group was encouraged by writing and reading the accounts of what was happening in the League schools. Even more effective was an editorial creation called "Want-Ads," which provided a channel for each school to describe its needs and resources to all other League schools.

> "Reading--Wanted: Information and procedures for setting up individualized reading program in Grades 2 and 3. Evaluation techniques are especially desired. Loma Vista."
>
> "Art--Write to us for guidance on setting up an activity day arts program. Stephen Foster."

> "Emotionally Disturbed--We can send a checksheet for those interested in evaluating the emotionally disturbed child. Loma Vista."

Role of the Facilitator

The concept of the interventionist changed as the project went on and as the peer group-school process perspective was developed. The concept was a long time growing, and it was even harder to make the changes in behavior that it demanded.

The schools were disappointed and confused when, at the start of the fourth year, the interventionists withdrew from the role of consultant. The change in role was declared openly to the schools, and the rationale of the new strategy was explained on several occasions. Within a very short time the teachers and principals began to give evidence of adjustment to the new relationship; some quickly took the initiative in directing League activities. There were some, of course--but a small percentage--who never gave up trying to get the intervention staff to provide expert advice. Nor was it easy for the intervention staff (about three people) to drop old behavior patterns. They were enormously helped to change by their own recognition that they did not, in fact, have any answers to give the schools, that teachers and principals possessed more relevant information. Even more convincing was the gradual picture of the stages of change which emerged from the study--a picture that indicated no neat, rational, generally applicable sequence, but highly individualized collections of events in various types of school settings, with the deed often preceding the concept. But no amount of evidence made it easy to give up the trained conviction that the schools required "input" of some kind. Even so, as professionals, the interventionists did change their behavior with the schools to try to play only a facilitator role, whether or not they were completely convinced of its adequacy.

A crucial component of the facilitator role was clearly identified in the fourth and fifth year. It was the clearinghouse function of the interventionist in this strategy. The sheer mechanics of keeping a central file of resources available in the schools, of sending out notices of meetings, of distributing the newsletter, of handling telephone requests for information--these occupied most of the time of the interventionists in the fourth and fifth years. It is quite possible that a group of schools could maintain clearinghouse services on their own, but the services must be there.

The interventionists also talked freely about DDAE processes with the principals and teachers. These processes were openly presented as the intervention objective and a major research interest of the project, and the schools were invited to help with the conceptualization of these processes.

Outcomes

The effectiveness of the strategy in the League project can be estimated by looking at indicators of the success of both parts of the strategy: (a) identification with a new peer group of schools; (b) the focus on DDAE processes shown by League school staffs.

1. There is a variety of data from questionnaires, interviews and observations which support the existence of a "League feeling" in the schools. The best possible evidence of strong group ties, however, came at the end of the project when the League schools initiated and carried through requests to their district offices for the minimum funding which would be necessary to maintain the League association for at least another year. The group letter from the principals states

their reasons for the request.[20]

> 1. We want to continue to have access to the great pool of resources that are available in the League of Cooperating Schools. The teachers in the League schools have improved noticeably the quality of instruction in our classrooms, as a result of League involvement. In large part, this improvement has been built upon the fact that the League teachers have been able to share ideas and materials related to the problems they faced as they attempted to make schooling a more meaningful experience for each child. We want League teachers to continue to be able to draw upon one another.
>
> 2. We want to continue, with our teachers, to work out better patterns of participative decision-making in each school staff. The League schools are developing a model of total staff involvement in solving the problems which face the school. This model is based on the cycle of: dialogue on problems, leading to decision-making, resulting in action, followed by an evaluation which starts a new dialogue. In this model, teachers participate in decision-making in a way that does not force the polarization which seems inevitable in the current union model. The principal and the teachers in a League school see themselves as colleagues, concerned primarily with figuring out more effective ways for community, administration and school staff to work together to improve that school. The League schools want to continue to encourage and help one another in a further exploration of constructive ways to share decision-making.
>
> 3. We want to increase our effectiveness as resources to other schools in our districts. The League schools can attest to the usefulness of getting help from people who face similar problems but who are outside one's own school. We would like to have more opportunities to share what we have learned with other schools. . . .
>
> 4. We want to continue the in-service training which the League experience offers us as administrators. As the League principals have explored different patterns of decision-making and have attempted, with our teachers, to evaluate our school programs, we have come to realize the importance of the sustained dialogue among League principals. The wide range of conditions represented in the group of League schools has been of inestimable value in giving each of us a clearer perspective on the problems he faces. . . .

Funding was obtained for 17 of the 18 schools. These schools immediately set up a planning committee of principals and teacher representatives to direct League activities during the year.

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[20] The request was initiated by the principals' group, then discussed with the staffs in each school. A number of staffs wrote additional letters.

2. The schools' awareness of and work on DDAE processes is described by several kinds of data. The letter requesting continuation of the League sets work on DDAE as a continuing objective. (See 1 above.)

The production and the use of League criteria for DDAE (see 1 above), of course, supports the existence of a shared expectation that League schools are concerned with DDAE. The central theme of the principals' paper on accountability is the well-integrated, largely autonomous single school staff. Questionnaire data described the League schools as very aware of staff relationships and very engaged in participative decision-making. Observations and informal reports revealed a number of experiments attempted with DDAE processes. Informal reports also described the League staffs as, for the most part, not involved in the various teacher-administration conflicts that touched almost every League district.

It is not possible to tell from one project, of course, how long the peer group must exist for a school's membership in it to attain importance. Particularly difficult in this project is the question of the effects of the mixed strategies of the first three years. Also, the research interest in DDAE may have increased the salience of these processes in the eyes of the school. (Although another interpretation may be that research interests are an honest position that could often be taken by interventionists.)

On the other hand, the League schools, drawn from different districts and with large distances between many of them, presented a very difficult situation in which to try to build a peer group identity. The clear success at the end of five years in this project makes it seem likely that success could be attained in less time in less difficult settings. Furthermore, the estimate made of the cost of keeping simply a clearinghouse service to maintain the League after the end of this project suggests that the strategy could be carried out with a very modest budget.

V. Decision-Making

The peer group-school process strategy implicitly assumes that the single school is the properly accountable unit, and that the school staff sets the objectives for which it will be accountable. This position is spelled out in some detail in the paper produced by the League principals (53).

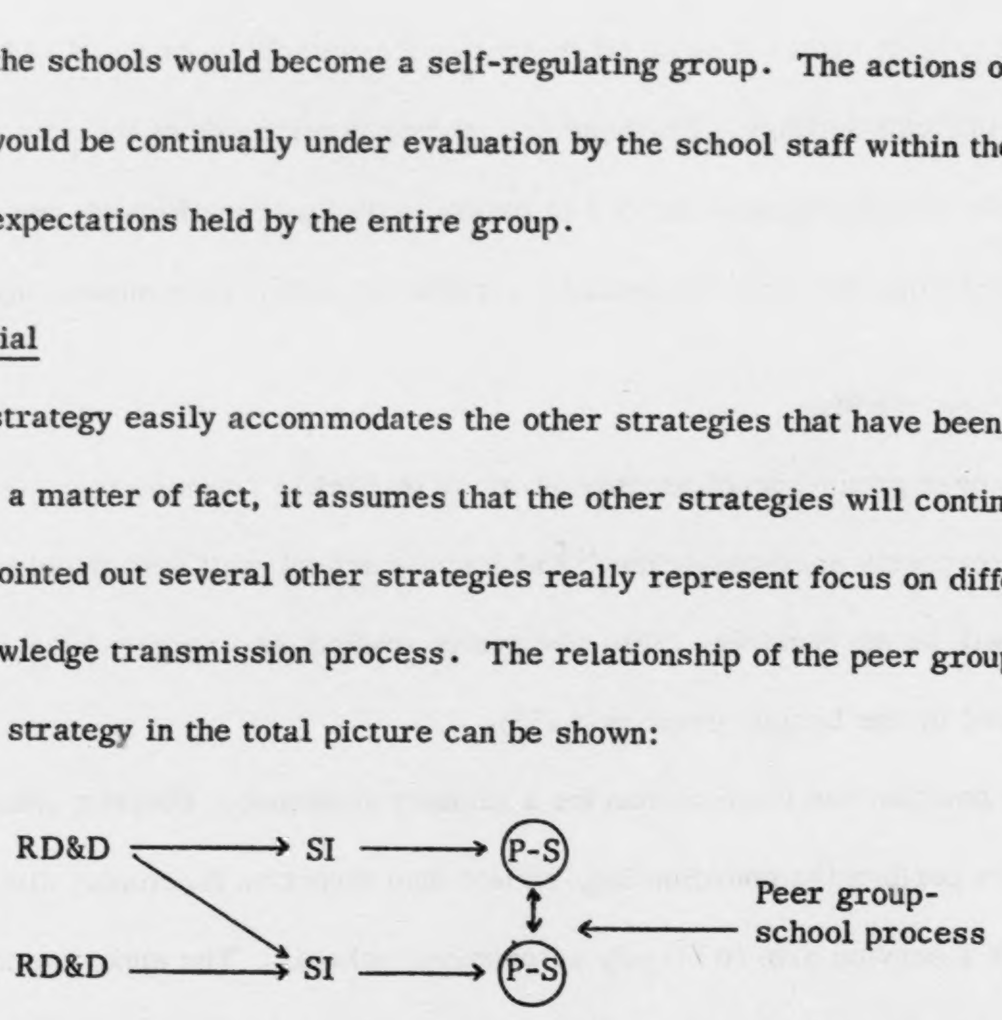
The position has implications for a district structure. District administration is seen as performing coordinating, rather than directive functions; district personnel are a service arm to largely autonomous schools. The superintendent is viewed as a monitor of processes used by the schools as they set and work toward their objectives.

The logic of this perspective also implies that each school is continually trying to find satisfying solutions to the demands of its community through its DDAE processes. The flexibility of DDAE patterns also implies the possibility of community participation in these processes, although the community, like the district office, is not seen as playing a directive role. (The League position paper places some clear limits on community control of schools [53].)

In its entirety, this perspective suggests that the peer group will exercise nformal surveillance over its members' efforts to cope with their problems, and will assist in those efforts. If this perspective were taken as the basis for a district organization, the schools would become a self-regulating group. The actions of a single school would be continually under evaluation by the school staff within the context of the expectations held by the entire group.

VI. Potential

This strategy easily accommodates the other strategies that have been described. As a matter of fact, it assumes that the other strategies will continue. Havelock has pointed out several other strategies really represent focus on different stages of a knowledge transmission process. The relationship of the peer group-school process strategy in the total picture can be shown:



Thus, the RD&D strategy continues and is always reaching some people in some schools. It is an important source of new ideas, but it is not seen as an effective means to change all, or even most, school personnel. In a sense, the peer group-school process approach assumes that social interaction strategies continue to socialize individuals within a single school, and it provides new reference groups for use in these strategies. Problem-solving strategies may still teach useful skills to school staffs, but the peer group-school process perspective implies that such services be available for schools in the group to use as they feel they need them. In sum, the peer group-school process perspective simply suggests that major intervention efforts to develop self-renewing schools on a broad scale would be most productive if they were directed at developing mutual help networks and shared expectations for continual examination of school processes in groups of schools.

The potential for this perspective is also considerable in handling a number of already powerful pressures which can be expected to increase in magnitude.

1. This model offers a viable alternative to the confrontation between teacher unions and school administration. By developing the staff of each school--principal and teachers--as an integrated unit, focused upon coping with the problems of that school, and by developing peer groups of schools, the model avoids separation of interests.

2. This perspective serves as a basis for a model for decentralization. A group of autonomous, accountable schools can be served by a pool of resources to which they have ready access.

3. There is indication from the League project that this perspective offers a way of allowing some schools to be supported in innovative efforts, before the respective districts are ready to make major policy changes for all their schools.

4. This perspective could best accommodate the large turnover of teachers in public schools, since its fundamental orientation is to improve the socializing mechanisms in school organizations. An extension of this idea is the potential value of the peer group-school process setting for teacher education. There is no reason why the first stages of teacher education, as well as what is usually termed "in-service education" would not be more effective if they occurred in a context of mutual professional assistance in coping with actual school problems.

The peer group-school process perspective directly confronts the two major problems in any widespread intervention aimed at producing self-renewing schools. First, by mobilizing an enormous, latent pod of resources, it offers the possibility of affecting large numbers of schools without first developing large numbers of specialized change agents. Second, by creating networks of mutual support and surveillance among the schools themselves, it offers a means for maintaining self-renewing behaviors after the formal intervention has ended.

The major problem with this perspective is also its major strength. It requires that we see clearly the necessity for changing our view of a world in which acquiring and disseminating valued knowledge is the province of a few. It requires that we face realistically a future whose uncertainty can only be handled by viewing every operational system as both a producer and user of potentially relevant knowledge, a future in which the paramount need is for ready access to a broad array of knowledge resources to solve problems that cannot be foretold. By creating group networks in which resources are mobilized for practicing different ways of coping with problems, the peer group-in school processes strategy becomes a parsimonious mechanism for setting in motion schools that can conceivably have more control over shaping their own future.

Summary

Six potential change strategies have been identified in this section as emerging on the scene of American education. The six are:

1. Political strategies dramatically suggest that we are in the decade of the "politics of education." Power, policy formulation and conflict are the cornerstones of politics and they are part of the educational scene. Whether they are harnessed to develop "grass roots" involvement in democratic processes or "pluralistic" education, or whether they result in "tearing asunder" our national faith in universal public education remains to be seen. "Who decides what," educationally, is the big question whether we are considering decentralization, accountability, "power," or newer relationships among governmental agencies.

2. Personnel training has focused on new ways of pre-service education for prospective teachers and administrators. Means have been (a) individualizing instruction; (b) placing trainees "on-site" in internships; (c) lengthening the period of training; (d) linking theory, research and practice more closely; (e) differentiating roles much more significantly (e.g., tutors, aides, interns, team leaders); and (f) focusing more heavily on performance criteria in evaluation, often using video-tape. Similarly, efforts at in-service training have been an outgrowth of pre-service teaching programs. The need for massive retraining of teachers and leaders is very pressing and is related to the problem of decentralization in that typical means of such training (e.g., district workshops, college courses) are clearly inadequate.

3. Systematic planning, including such techniques as PERT, PPBS,

and computer simulation, has grown out of industry and other governmental agencies and is just now being applied on a large scale to schooling. On the one hand, such a movement is responsive to the need in education to be more accountable and to consider its purposes. On the other hand, there is danger of over-centralization, rigidification, and losing sight of our more person-oriented values. Planning, including goal setting and evaluation activities, holds much promise as a strategy for improving education. Its problems, too, are related to "who makes what decisions?"

4. Laboratory schools, model schools and experimental schools have been in existence for some time. However, to date, they have not had a significant impact on American education. Newer proposals hold much promise. These proposals suggest the separation of experimentation, demonstration, and teacher training functions combined with some type of overall RD&D perspective and communications scheme. These newer proposals hold much promise for improving American education.

5. Alternatives to traditional public schooling include guaranteed performance contracting, voucher plans, revitalized private and parochial schools, "new schools, " and mass communications. They hold promise for encouraging pluralism in American education. They run the risk of "commercializing" education and of segmenting societal values. The basic question is still present; one of decision-making.

6. Emerging from the work of the League of Cooperating Schools in Southern California a strategy referred to as a "peer group-school process strategy." This strategy builds on the notions that the single school is the most viable unit

for change; that adults can be resocialized; that schools can share their knowledge and resources; and that such a strategy can ultimately lead to institutional self-renewal. Such a strategy is potentially very powerful in that it does not rely heavily upon outside experts, is not terribly costly, and deals at length with the critical question of decision-making.

The federal concern for education should include careful consideration of these emerging strategies for educational change. They are comprehensive enough to be joined with already existing strategies in a significant effort to improve American education. If this improvement is to be brought about in the face of those factors which inhibit change, we will need to rely on comprehensive strategies. To do otherwise "is only to climb mountains one at a time." One might ask, "How serious are we really about providing quality education and equality of educational opportunity to all of the people of our nation."

Recommendations

Based upon the foregoing section, Strategies for Change, the following recommendations are made to the President's Commission on School Finance.

Recommendation I

The prime Federal concern in education has to be directed at the provision of quality and equality of educational opportunity for all the citizens of the nation. All programs should emanate from this concern.

Recommendation II

The Federal concern for education should be a comprehensive one. That is, it should focus its attention and support on the development of strategies for change which overcome traditional societal and educational resistances to change and which result in significant improvement in the teaching-learning act.

Corollary II-A--While there is always a need for research and development into and of new and promising practices (e.g., instructional technology, materials, curriculum), the fact is many such practices exist but are not utilized in schooling. Our knowledge is significantly ahead of our practice. It is recommended that the Federal concern for specific changes be lessened at this time until perhaps when our ability to implement change catches up with our knowledge.

Corollary II-B--New strategies do need to be developed which will bring knowledge and practice closer together to improve the teaching-learning act. There should be substantial Federal funding of research in areas such as organizational development, communications and decision-making in education. No less than fifty percent of all research monies should go into such areas during the 70's as a means of closing the knowledge-practice gap.

Recommendation III

Underfinancing is a major deterrent to educational change. Substantially more monies will have to be brought to bear upon the educational scene if such change is to occur.

Corollary III-A--The property tax and the sales tax, particularly in urban areas, are at present overburdened sources of school finance. Federal income sources will have to be utilized.

Corollary III-B--It is recommended that Federal monies for education not be in the form of general aid. Rather, such monies should be directed at several priorities within a comprehensive plan directed at organizational development.

Corollary III-C--Federal monies should be allocated as a result of realistic long-range planning considering such factors as the growth of GNP, inflation and priorities.

Recommendation IV

Education is essentially a "people" business. Much of the Federal commitment to education should be for the development of pre-service and in-service training of change oriented personnel, particularly for leadership positions.

Corollary IV-A--The Federal Government should continue to fund alternative training strategies as a way of testing and improving that training.

Corollary IV-B--The Federal Government should continue and expand its efforts to improve the quality of teaching by encouraging differentiated staffing and by requiring that strict training criteria be met in funded projects.

Corollary IV-C--On-site training is recommended for Federal encouragement rather than traditional "in college" training.

Corollary IV-D--The Federal Government should give incentives for the inclusion of other than "typical" middle class populations in training programs for education.

Corollary IV-E--The Federal Government should encourage research into early retirement systems for teachers as a means of bringing younger, more socially conscious individuals into the profession.

Recommendation V

The Research, Development and Diffusion change perspective has proven to be an adequate strategy for most macrosystems such as the U.S. Government. It is, in fact, that strategy presently implicit in Federal operations. It is recommended that this strategy become explicit and that present ongoing programs be reorganized with the strategy, priorities and comprehensive planning all considered.

Corollary V-A--Consideration should be given to coordinating and/or consolidating the various educational programs of USOE, NIE, OEO, NSF, and so forth within this perspective.

Corollary V-B--Training programs for Federal employees and all educators should be developed so that the perspective is clearly understood, communications facilitated and problems of vested interest minimized.

Recommendation VI

Special attention must be given to the diffusion stage of educational change for it is often at this critical point where new knowledge "evaporates" rather than finding its way into practice.

Corollary VI-A--It is recommended that Federal support of research into organizational development, communications and decision-making, in the main, be focused upon "how innovations diffuse" with the ultimate objective being to improve such diffusion (see Corollary II-B).

Corollary VI-B--Experimentally, at least, and borrowing heavily from a social interaction perspective, the Federal government should consider encouraging the establishment of intermediate agencies which would serve to bridge the gap between knowledge and practice. |I|D|E|A|, the Texas regional service centers, the New York Boards of Cooperating Educational Services (BOCES), and various metropolitan planning agencies are all examples.

Recommendation VII

The ultimate unit for change is the single school. It is recommended that the Federal Government support only those action projects which have as one of their ultimate objectives the development of self-renewing schools.

Recommendation VIII

The upgrading of instructional materials and equipment has always been a viable means of improving the teaching-learning act. However, too frequently, newer materials are developed on the basis of conventional wisdom or "what the market will buy." The Federal Government should consider the use of incentives to private industry for the development and testing of newer materials and equipment based upon research and funded knowledge.

Recommendation IX

We are in the middle of "an age of educational politics." In many ways, it promises to create anarchy in the institution of education as well as in other social institutions. In other ways, the awakening of education to the political "realities" of life is helpful to bringing about needed changes. The Federal Government should be aware of, study, and utilize political processes as it assists in the improvement of education.

Corollary IX-A--It is recommended that the Federal Government support research into the problems and potential of politics as a force for educational change.

Corollary IX-B--At the heart of political processes is the matter of decision-making. The national interests would be well served if the Federal Government would assist in the clarification of decision-making roles in education. To begin with, its own role needs clarification. Further, through the support of research and action programs at state and local levels, the Federal Government could be of assistance to others in their own role definitions.

Corollary IX-C--One promising political reorganization of education resides within metropolitan planning and finance. The Federal Government should build a system of incentives to support this movement.

Recommendation X

The Federal Government should encourage the use of long-range, systematic planning in education by:

(a) Utilizing such procedures in education itself;

(b) Developing and maintaining adherence to strict planning criteria for all funded projects, including the criterion of broad-based involvement;

(c) Supporting training programs in systems planning, computer simulation, and so forth for educational practitioners and potential educators;

(d) Providing incentives to business and industry to assist educators in long-range planning.

Recommendation XI

The Federal Government should support a network of experimental schools throughout the nation.

Corollary XI-A--There should be several independent laboratory schools committed solely to inquiry, innovation and research in education.

Corollary XI-B--There should be several networks of demonstration schools deliberately trying out the ideas developed in the laboratory schools.

Corollary XI-C--A linkage system (i.e., television) should be supported which connects laboratory schools and demonstration schools in geographic areas with each other. Ultimately, such a linkage should include all schools.

Recommendation XII

Alternatives to public schooling should receive experimental support from the Federal Government since they have the potential of providing new knowledge to public education.

Recommendation XIII

The Federal Government should consider as a high priority for funding any educational improvement project which relies heavily upon "self-help" as its basic strategy.

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President's Commission on School Finance

Report of Task Force D

INSTITUTIONAL ARRANGEMENTS IN 1980

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INTRODUCTION

There appears to be a conviction in an ever increasing percentage of American citizens that the pace and style of life in America will be undergoing considerable change in the decades ahead. This conviction is expressed in a number of ways, from extended analysis (Tofler), to new terminology (futurism), to an uncomfortable, anxious feeling that somehow we are entering an era of unprecedented change.

It is likely that no segment of American life will escape the consequences of this upheaval. Most of society's institutions (legal, medical, industrial, governmental, educational) will be forced to redefine their missions and the ways in which they can best serve a very complex and changing society.

The purpose of this paper is to speculate on the ways that schooling and the educational system will be affected by, and in turn will influence, the process of change in American society.

This is no easy task. Indeed, after one identifies what he believes are reasonably desired entities for examination, he soon finds that these entities are imbedded in a complex social and cultural environment and that all the entities interact with one another in an unpredictable manner. The "educational futurist" is forced to approach the problem on a broken front, attempting, as much as possible, to try to identify trends that have a high probability of being sustained in the future. Based on these estimates are attempts to discern implications for education and schooling.

In Section I, of this report, an examination is made of the impact of technology on American life and the implications this has for the schooling and educational system. Two basic premises emerge: Americans will have more leisure time, and they will find it increasingly difficult to go through life without either changing occupations or upgrading considerably their occupational skills. These two developments will have an enormous impact on the schools. Schools will be called upon to meet the demands of persons who wish to fill leisure time with educational activities and/or wish to obtain additional occupational training. This implies the need for a far more open educational system: one that maximizes the accessability of education to all, regardless of sex, race, age, or socio-economic status. We define this as "equality of educational opportunity."

The second section of this paper deals with the governmental structure--local, state, and federal--that will be needed if such an open, equal system is to be developed. A basic premise of section II is that the present segmented and uncoordinated system will be inadequate to meet a national effort to insure "equality of opportunity." A new relationship among local, state, and federal educational organizations is discussed and a mechanism is suggested for realizing this new relationship.

Section III contains a discussion of the critical need for trained teachers and the teaching technologies that are necessary to maximize the effectiveness of the schooling and educational system described in sections I and II. The inadequacies of existing teacher training institutions are discussed and a rationale and plan for a more focused and open teacher training institution are developed.

Section I: *An Overview*

In order for equal opportunities to be extended to all, a recognition of the interrelatedness of education as an institution with most other societal institutions is essential. However, recognition of these interrelationships is in itself not sufficient to ensure equal opportunities for educational achievement. The present institutional structure of our society, whether by intention or otherwise, has produced a multiplicity of constraints on the realization of this and other educational objectives. These considerations have led us to propose a reorganization of the institutional network so that existing constraints might be mitigated or even transformed into advantages for education.

The accomplishment of equal educational opportunity through institutional reorganization is a critical precondition for the achievement of one of our primary goals for education over the next decade: the creation of conditions allowing for the individual's *freedom to learn* throughout his life-span.

Our conception of "freedom to learn" embraces a number of considerations, most of which are associated with recent technological and social changes in the United States. We define individual freedom to learn as the *opportunity for open access throughout the individual's life-span to educational pursuits which he personally defines as desirable or useful to his interests*.

Opportunity for open access to educational pursuits

It is becoming increasingly evident that a formally organized system of schools can only partially fulfill the *educational* needs of our society and its members. As an objective, freedom to learn encompasses not only schooling but also this broader notion of access to channels that make available the fulfillment of educational interests which may surpass or supplement the offerings of the school system.[1] (29)

There are several reasons why it is necessary to identify this broad-scale opportunity as an educational objective, not the least of which involves the personal consequences of continuing changes in the nature and function of the occupational structure due to technological developments over the past few decades. The occupational structure of the United States can presently be characterized by an increase in numbers of white-collar and professional occupations (3), largely as a result of advances in the development and use of automated production processes in industry and agriculture. More and more occupations require dealing with people and/or symbols rather than with materials. At the same time, automation has increased productivity on a per capita basis, resulting in higher individual worker salaries (7). One consequence of these changes is increased requirements for formal education and training for both blue-collar and white-collar workers. In some cases, especially in the blue-collar situation, these requirements may be based more on the employer's beliefs about formal education as an indicator of other desirable qualities in a worker than on the actual job requirements. For example, discrimination in industry against the high-school dropout is most evident when unemployment levels are highest (27, 18)

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[1] The equation of schooling with education is one of the most persistent "myths of education," and one which has been typically manifested institutionally in the lack of opportunities for legitimated learning outside the formal school setting. (Report to the President. White House Conference on Children. U.S. Government Printing Office, 1970, pp. [illegible].)

Another consequence of these changes for the technically skilled white-collar worker or professional is the increasing probability that his skills and knowledge will become obsolete, thus requiring alteration of career plans and/or continual retraining in new occupations. The growth of knowledge and the potential for its rapid obsolescence in scientific and technical occupations can be inferred, for example, by the fact that over 1,000,000 articles are published *annually* in 50,000 scientific and technical journals. Electronics and electrical engineering occupations alone publish 1,000 technical journals annually containing up to 70,000 papers. (25)

Finally, the increasing amount of leisure time available to all workers is a consequence that flows directly or indirectly from many of the changes we have mentioned above. The prospect of greater amounts of leisure time and what to do with it has been a topic of much public concern in itself, and there is at least one scientific journal devoted to the study of leisure (*The Journal of Leisure Research*).

The general implications of the shifts in the nature of the occupational structure we have identified are that: (1) changes in job requirements for many occupations lead to demands for greater amounts of specialized formal training for workers; (2) many workers, especially those in occupations requiring high skill levels, may no longer be able to think or plan in terms of a single occupational career based on a single period of formal education acquired early in their lives; (3) larger amounts of leisure time are increasingly available to most workers at all levels; and (4) workers at all levels now have more means than ever before to purchase goods and services in the realm of leisure and recreation. There is no reason to believe that any of these trends will be reversed; rather, they are likely to increase in scope over the next decade.

We have said that the personal consequences of shifts in the occupational structure form much of the basis for our recommendation that creation of the conditions for freedom to learn be pursued as a major educational objective in the 1970's and beyond. Let us examine the relation between the shifts and consequences we have discussed and the access to educational pursuits and activities available for all of society's members.

The demand for more specialized technical education for a large number of workers will probably have to be met largely within the context of formal school organizations. This is already reflected in the fact that the high school population rose from 10 million in 1960 to about 15 million in 1970, and that the college population will have risen to 12 million or more by the end of the 1970's from only 4 million in 1960. (37) In California alone about 80% of those who graduate from high school also continue their schooling in some form of college or university. (38)

However, much of this vast population of students is enrolled in institutions of higher education "involuntarily," as Martin Trow puts it. (39) In this, Trow is referring to the constraints placed on people today to attend schools for reasons basically unrelated to education, or to the desire for education, and in some cases unrelated in any direct way to the occupational and technological trends discussed earlier. These constraints, like the many identified throughout this report, result largely from the particular pattern of interrelation institutions of education have with other societal institutions. Some of the many non-educational functions that schools are called upon to perform are suggested by Trow:

> The growth of enrollments and the movement toward universal higher education has made enrollment in college increasingly obligatory for many students, and their presence there increasingly "involuntary."

> In this respect, in some strata and places, colleges begin to resemble elementary and secondary schools, where it has long been recognized that compulsory attendance increases problems of student motivation, boredom, and the maintenance of order. The coercions on college students take many forms. The most visible in recent years has been the draft, which has locked many young men into college who might otherwise be doing something else. But other pressures will outlive the reform or abolition of the draft: the unquestioned expectations of family and friends and the consequent sense of shame in not meeting those expectations; the scarcity of attractive alternatives for youngsters of eighteen or nineteen without college experience; the strong and largely realistic anticipation that without college credits they will be disqualified from most of the attractive and rewarding jobs in the society as adults. As more and more college-age youngsters go on to college, not to be or to have been a college student becomes increasingly a lasting stigma, a mark of some special failing of mind or character and a grave handicap to all the activities and pursuits of adult life. (36)

These extra-educational functions imposed on schools directly or indirectly by other institutions are inimical to the freedom to learn because they negate by the very nature of their present existence the basis for such a freedom-- voluntary and personal involvement in one's own education process, in this case as it relates to schooling. Attendance, not learning, is the only requisite that must be met by the individual subject to these forces. The Selective Service requirements for college deferments in the past, for example, have specified a certain number of units per semester for anyone wishing to defer, or in many cases, eliminate altogether, the necessity of military service. But our general point is that when schooling becomes but an alternative form of detention for large numbers of students, the freedom to learn is not an achievable goal for schools at any level. Nor do elementary and secondary schools escape the imposition of extra-educational functions from other institutions, with much the same result as is found in colleges and universities. Kozol's book, Death at an Early Age, (37) is but one striking piece of evidence among many that minority children now typically attend school involuntarily and under conditions that proclude not only the freedom to learn but any meaningfulness in the experience as well. These children are being "detained" by society until they reach an age when the form but not the consequence of detention will change to meaningless work, or equally meaningless dependence on the public dole.[3] (8, 22, 7, 33)

Thus, without having even considered the openness and availability of channels for open access to educational opportunities based on interest and ability outside formal schooling contexts, we have seen that within these institutions themselves the opportunities for meaningful learning are limited and limiting in their potential for creating conditions necessary for the individual's freedom to learn as we have defined it.

And yet, as we have attempted to suggest, individual freedom to learn is becoming more and more a necessity in the educational process. No formal school system can expect to prepare everyone programmatically for the diversity of jobs that exist now, not to mention those unknown occupations that will exist but a few years from now. More importantly, perhaps, no system of schools, no matter how co-ordinated or comprehensive, can be expected--nor should they try--to fulfill the specific educational needs of all of society's members. On the other hand, programs based on some Golden Mean of educational possibilities will not necessarily work either.

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[3] One facet of recognition of this kind of "detention" can be seen in the demand for community control of schools (see, e.g., David Rogers, 110 Livingston Street. New York: Vintage, 1969; and Henry M. Levin, Editor, Community Control of Schools. [illegible] To the extent, however, that the cry for community control of schools is incompatible with educational professionalism [illegible] [illegible] "Community Control and Quality Control in Urban School Systems," in Levin, op. cit., [illegible] [illegible] [illegible] Charles E. Silberman, Crisis in the Classroom. New York: Random House, 1970, pp. [illegible]

Schools can perform perhaps two functions well in the future: (1) they can become a "liberating" educational influence on their student-constituents, preparing the way and providing the groundwork for exercise of educational freedom of choice and opportunity over the student's entire life-span; and (2) they can, at the upper levels, provide much of the initial technical and professional training an individual will need to fit into a changing society in a meaningful way. This latter function includes the provision for retraining those persons finding it necessary or desirable to alter their careers later in middle age or beyond.

The primary function of formal education, the "liberating" function, however, will not appear to be a positive function at all unless new channels of opportunity for learning are provided outside the present context of education.(19) That is, especially in the years of early schooling, formal school contexts must provide for a form of learning that is oriented to the individual's development of a capacity for exercising his freedom to learn and to make personal educational choices from among a variety of available options later in life. The variety of educational needs and individual differences among students must be recognized and become a set of conditions for planning school organization, curricula, and instructional programs and techniques. Again, however, the most crucial aspect of such changes in the organization and operation of schooling is the existence of a viable rationale for them. It will be of no use to encourage children to make educational choices and to emphasize a broad range of acceptable pathways if opportunities to exercise choices are not made available. We shall now turn to a discussion of some of the viable pathways for educational freedom of choice that might be opened outside the formal school context.

One form of "education" that already affects most of the population is commercial television broadcasting. That this form of "education" is effective is attested to by the amount of time television is viewed per capita, (38) and by the number and amounts of commercial products it is able to sell for program sponsors. That this is the most desirable form of "mass education" is another question entirely. Certainly most watchers of commercial television do not do so in order to "learn." Learning of certain types apparently occurs, however. Our point here is that an effective medium is available for explicitly educational purposes, but that it is either ignored or only superficially utilized or understood by those responsible for education at present. (33)

With the apparently inevitable development and commerical availability of video cassettes near at hand, it should be evident that opportunities for offering "freedom to learn" (i.e., freedom of educational choice) in the form of instructional packages which cover a variety of contents might be made available. If schools were able to socialize students to the desirability and necessity of continuing education, the commercial success of such ventures would be virtually assured, so long as the educational needs and desires of the consumers of these products were met.

A more elaborate proposal along these same lines involves the development of a central learning-resource center (or several regional centers) which would function as computerized resources for a number of packaged computer instruction programs to be made available at terminal nodes placed in libraries or in similar locations within a city.(19) This plan for computer assisted learning is drawn in terms of a feedback, or individualized instruction model, where learners may progress at their own pace through the use of game models and simulations. We would like to expand this argument to include video instruction resources, since this broadens the subject matter capability of the system and increases the potential for interest to a wide variety of users, hopefully without appreciably adding to the cost. If the success of such programs were sufficiently high, the production costs of the terminal hardware could be brought down within reach of the average family (about the cost of a television set). (19)

Such ventures depend, again, on formal educational organizations providing the groundwork in individual motivation to make use of such resources. The *initial* costs of this kind of plan would be quite high, and would undoubtedly have to be borne by government; these costs could be brought down over the long run if the "liberating" functions of public schools were made a reality.

We have suggested in this section that schooling must be revamped so as to provide the motivations necessary for individual exercise of the freedom to learn, and we have also attempted to illustrate one possible means of creating the conditions of choice for the greatest possible number of people compatible with changing economic and social conditions. The plan we have discussed suggest one means of supplementing formal schooling and offers a meaningful form of adaptation under the appropriate conditions to increased amounts of available leisure time.

We have not, however, addressed directly the problem with which we began--i.e., what Trow termed the increasingly "involuntary" aspect of schooling. No program or scheme for widening educational choices can alter in itself the nature of the extra-educational functions required of today's schools, nor can it totally eliminate the effects of organized education's relation to other societal institutions. The plans we have suggested, however, can go some distance toward eliminating the stigma involved with not attending formal institutions of learning by providing for and legitimating informal programs of choice for those who desire to use them.

Nevertheless, the institutional environment of formal education must be altered in such ways that, for example, attending school is not tantamount to alternative detention (where the alternatives may be military service, social stigma, or an endless cycle of meaningless work). Until education as an institution is made responsible to changing social and human needs, and until this responsibility can be expressed meaningfully and forcefully at the top levels of government, freedom to learn cannot exist. Another part of this responsibility lies in the quality of teacher education programs.

Life-long learning opportunities

The basis for considering the necessity of opportunities for life-long education have been mentioned above: the increasing probability that many individuals will be compelled by external conditions, or through their own interests, to alter career patterns; the growth in the number and kinds of occupations requiring less than a five-day work week, increasing the time available for non-work related activities; and, given the continuing rise in the number of persons who have completed high school and college, the likelihood of greater demand for more "sophisticated" forms of diversion, including greater quantity and higher quality in learning opportunities.

This does not mean that the conditions will be created for a new nation of renaissance men. It does mean that conditions are changing such that more and more people will express a need and demand for learning opportunities. On the one hand this is so because people must prepare themselves for an uncertain future, and on the other hand it is so because people may have been stimulated through their schooling experiences to feel a self-imposed obligation to pursue further learning. This may simply mean that some will be enabled to learn anything from how to play better tennis to how to repair their own automobiles. It may also mean that some kinds of career changes may be more easily supported and with less stigma than is today attached to the middle-aged student. Or it may mean that interested persons not concerned with the attainment of academic degrees will be allowed to pursue independent lines of intellectual thought without binding themselves unwillingly to degree programs or limiting themselves to the subject-matter offerings of an extension program.

The various opportunities necessary to the fulfillment of this kind of freedom to learn can partially be achieved through the network of learning centers and terminals suggested above. This system will probably be especially useful in those areas where the chance for involvement in formal educational programs is lowest, i.e., in small towns and rural areas. But, consistent with our notion that the present system of formal schooling must be reorganized to provide socialization and incentives to exercise the freedom to learn, that latter institutions also have a critical role to play in the process.

In the first place, there is probably no valid reason to concentrate education for the freedom to learn in the elementary school. The social and technological conditions discussed here are upon us now, and to leave the present adult population out of our scheme for educational restructuring would be to miss the major emphases in our argument. Thus, schools at all levels should be organized to fulfill the resocialization function we have said is necessary for students and potential students of all ages. This argument is based on the belief that mere *provision* of a variety of opportunities for learning will not ensure *use* of them, and that some re-education in this direction will be necessary. This is what we mean by the need for socialization for exercise of the freedom to learn.

One kind of organizational response to these needs would involve two major changes in the relationships between the school and the community, and between schools at different levels in the system. First, schools themselves could become local learning centers for community members of all ages and with a variety of educational needs. The second major change--one which would facilitate the usefulness and general responsiveness of the school to local needs, would involve a regional coordination and cooperation between schools of different levels. Thus, the elementary schools and high schools in a local area would become mutual resources for one another, for example. Colleges and universities, which have a tradition (sometimes unrealized in practice) to community service, could provide on a regular basis personnel and materials for local workshops and presentations based at the local elementary or high school. At the same time, the local elementary school could, for example, provide an in-service training ground for teacher education programs, becoming an integral part of such programs rather than serving as reluctant sources of "student-teaching" for the final year of a student's training. Contact with the university could also provide elementary and high school students, and local community residents as well, with a more realistic picture of the nature of higher education and the kind of opportunities that it offers. The details of this kind of plan will be spelled out in a later section of the paper.

Section B: New Institutional Arrangements at the Federal, State, and Community Levels

Introduction

The purpose of this section is to discuss specific programs leading to school improvement through new institutional arrangements. Some are new and need much more elaboration before they can become effective techniques for solving the myriad of problems confronting American education. Issues in urban centers are of prime interest in this report but not to the exclusion of issues facing other segments of our society.

Providing for new institutional arrangements requires a careful examination of all levels and aspects of education. Change becomes a series of alterations for any one specific recommendation to become effective. For this reason, we explore federal, state and community structures as well as the internal makeup of individual school systems and their relationships to other social systems.

Education and the Federal Government

Traditionally, the federal government has made educational policy a state matter rather than a federal responsibility. There has been little in the way of leadership provided by the federal government. The United States does not have a national policy toward education nor is there a movement in that direction. Education has always been a very controversial issue as to what role it should play in national priorities. So controversial was it that the fathers of our constitution did not make mention of federal responsibility toward education in that document. It was not until the Russian space breakthrough in 1957 that the nation was awakened to the value and impact education can have on our country. President Eisenhower, in a press conference shortly after the Sputnik launch, did not even mention education when asked what the nation would do as a result of the Russian success. However, in the months to follow, education began to surface as the nation's best hedge against being reduced to a second class world power. Since that time, our concern over the training of skilled workers has dominated the country. The budget for education expanded rapidly at local, state and federal levels. Throughout the 16 years since Sputnik, billions of dollars have been spent on education but without strong federal leadership. The U.S. Office of Education of the Department of Health, Education and Welfare has not been able to show its potential as a guiding force in education. One reason for this deficiency in leadership is the lack of control over educational programs administered at the federal level. There are 10 major educational programs spread over five separate federal departments and agencies. Each of these departments goes its own direction, often with little awareness of other agencies and their direction, often with little awareness of other agencies and their direction. Among the many political reasons for lack of educational leadership at the federal level is the status of the U.S. Office of Education. Its director, the Commissioner of Education, is buried into the structure of the HEW under the direction of the Secretary of Health, Education and Welfare who coordinates the activities of the three separate operating units.

There is strong reason to believe that education should be taken out of its present government position and allowed to stand alone. The establishment of a Department of Education with a cabinet level appointment would greatly increase the federal government's leadership in matters of education. As shown in Table 1, the budget for the Office of Education already exceeds those of four

TABLE I

1970 Budget Authority and Number of Permanent Personnel Employed at the End of 1970 for Cabinet Level Departments and the Office of Education

Departments and Agencies	FY '70 Budget Authority (in billions of $)	Rank	Number of Permanent Personnel at end of 1970	Rank
Defense	78.5	1	1,190,000*	1
Treasury	19.1	2	86,700	3
Agriculture	8.7	3	83,000	4
Transportation	7.0	4	62,400	5
Labor	6.9	5	10,200	11
Housing and Urban Development	4.4	6	14,900	10
OFFICE OF EDUCATION	3.8	7	3,000	12
Interior	1.8	8	58,000	6
Post Office	1.6	9	567,000	2
Commerce	1.0	10	28,400	8
Justice	.9	11	37,400	7
State	.4	12	23,900	9

*Includes 30,700 civilian and 1,165,000 military personnel.

Source: Office of Program Planning and Evaluation in the Office of Education.

cabinet level department in Education, Justice, Commerce and Labor. No other nation in the western world has followed our example in putting Health, Education and Welfare in one department. In commentary on this arrangement James J. Gallagher, former Deputy Assistant Secretary for Planning, Research and Evaluation, Department of Health, Education and Welfare, observed: "I cannot think of a single important reason why these three unlikely companions health, education and welfare share the same department."(10) Regarding the conditions under which education must function, Gallagher points out: "The tasks of the Office of Education are becoming more and more complicated by the additional layers of bureaucracy that must be negotiated to achieve effective programs." (10)

The establishment of a Department of Education is not limited to those who have worked within the present structure. The National Education Association recently made the same recommendation in its [illegible] entitled "The Future of the Education." Others are also fully aware of the need to consider our national priorities and establish national policies toward education. Delegates to the 1970 White House Conference on Children, in their Report to the President, made the following recommendation:

> We recommend, that a Department of Education, with full cabinet status, be established and backed by a National Institute of Education in addition to the present United States Office of Education. The Department of Education shall contribute significantly to the considering of national priorities, establish national educational policies, and promote constructive change in educational practice, all directed toward the full development of individual potential and the welfare of our society.
>
> The immediate change in this Department is:
> Provision of resources for [illegible] the growing number of school districts [illegible] of financial [illegible]
> Comprehensive implementation of [illegible] public education.

> Increased educational experimentation through a wide variety of educational institutions, with public accountability.
> We make our recommendations in light of our conviction that school is a concept, not a place, and that schooling and education are not synonymous. (19)

A Department of Education could then supply the framework within which leadership could be provided. However, the success of such a department would be determined by its own internal priorities. One major function that the Department of Education could serve is in the area of research and development. Presently, research through the Office of Education is segmented into small parts with little long range planning. Numerous grants are awarded to individuals and groups for seemingly important projects. A major complaint frequently voiced by recipients of these grants or those that have projects that require funding, is the short duration of the research grant. Generally, grants are awarded for three year periods, but are reviewed and renewed every 12 months and the award is renewed over shorter periods of time. While it is clearly necessary that checks be built into research grants to insure maximum benefit from the funds expended, short term grant periods and frequent reporting often tend to fragment the project in question so much so that the quality of research is decreased by an effort to meet reporting deadlines. Doing a high quality research program into practice requires considerable effort and time to accomplish that effort. Ralph W. Tyler recently suggested that one way to insure that the greatest attention is given to research itself is to make grants for periods of five years, renewable at [illegible] year for the sixth, seventh, and subsequent years. This means that the research effort would have five year blocks of time within which to work. This is not merely an effort to insure longevity; rather, it is a necessary component when studying the ever-changing conditions of human behavior and process variables.

Research and development at the federal level could greatly decrease the burden now assumed for that function by state and local groups. With the financial conditions at the critical point in many states and local communities, there is the strong possibility that research efforts will be cut back or eliminated to satisfy more immediate problems. While this approach may alleviate an immediate crisis, it creates even greater problems in the future.

National expenditures for educational research are quite small, resulting in an even greater lack of direction for those in education. In 1968, the New York Committee for Economic Development concluded: "The total funds expended by the United States on educational research, development and evaluation, is a small fraction of one percent of the total investment in education. The schools suffer noticeably because of the neglect." No major industry could expect to progress satisfactorily unless it invested many times this amount in research and development. IBM, for example, was cited as devoting about five percent of income for research and development. (1, 83) Charles E. Silberman states: "What is mostly wrong with public schools is not due to venality or indifference or stupidity, but to mindlessness ... the failure or refusal to think seriously about educational purpose, the reluctance to question established practice." (10, 10) Hartwell C. Herring concurs that "mindlessness" is the characteristic that describes educator's lack of concern for research. School districts, in general, maintain only token research programs, usually under the heading of "Testing." While testing may be an important ingredient in the school pattern, the unfortunate fact is that there is little or no money available for interpreting test results.

The National Institute of Education.

In the preceding paragraphs a plan has been suggested for the establishment of the role of research and development within the U.S. Department of Education. An alternative method by which research and development in education could be consolidated within a single framework has been suggested in the creation of the National Institute of Education (N.I.E.). The primary objective of the N.I.E. would be to improve the quality and effectiveness of the nation's research and development that the system will ensure both quality and equality in its educational programs. The establishment of a National Institute has the support of the present administration as well as widespread support from legislators, practitioners and educational researchers. David R. Krathwohl, asked why a National Institute of Education is needed, responded in the following manner:

> While there have been many positive aspects to past research programs, there have inevitably been disillusionments. Currently a crisis of confidence in educational research exists. Members of Congress, the Bureau of the Budget, the planning branches of HEW and the President's Science Advisory Committee, among others, have been highly critical of the research program that has developed.
>
> Over the years an ever-changing research policy in priorities and modes of operation has been followed. (This was inevitable considering the rapid turnover of HEW personnel, the rush to show new developments with each new HEW administration, and [illegible] "[illegible]" policy.) There has been no natural focus around which educational practitioners, [illegible], [illegible], educational researchers, and the interested lay public could effectively unite to support good programs and to change the bad, as often has been done in bringing these groups together as a constituency for the support of education research.
>
> The National Institute could:
>
> a. provide a new beginning;
> b. provide a focal point for bringing together a constituency of legislators, practitioners, and interested public for educational research;

c. provide stability to research policy so that plans can be implemented and results obtained;
d. provide visibility to the research effort which is impossible in a government bureau buried in a Department;
e. make possible a personnel policy, like those in NIH and NSF, with enough supergrades to provide staff stability to able persons; and
f. do for education what NIH is doing for health--increase available resources, provide a focal point for planning and program implementation.(17)

One of the most influential supporters of the N.I.E. is Sidney P. Marland, Jr., Commissioner of Education. While Marland has been accused of not taking a strong enough public stand on the need for the N.I.E., he has certainly had a considerable influence on many legislators to consider the Institute favorably.

The one man who has devoted the greatest amount of effort toward the identification of the specific manner in which the N.I.E. would function is Roger Levien.[3] While many critical questions will remain unanswered regarding the N.I.E., Dr. Levien has set forth some statements that seem to indicate the general direction and nature of the Institute. He states that:

> 1. The national Institute of Education will conduct and support research and development concerning all levels of education. The National Academy of Education, in its book Research for Tomorrow's Schools, distinguished two major kinds of research:
>   a. Conclusion-oriented--whose objective is the addition of basic concepts to our fund of knowledge. The relevant criteria of excellence are those of the disciplines and concern both the "contribution" to knowledge and the appropriateness of the modes of inquiry and exposition.
>   b. Decision-oriented--whose objective is the improvement on operational decisions affecting education. The relevant criteria of excellence concern the degree to which the decisions are improved, which in turn is determined by the ultimate effect on education.
>
> The Institute may conduct both kinds of research and development intramurally. It may support their conduct extramurally at universities, in laboratories and centers, in industry. In every case it will have

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[3] Dr. Roger Levien of the Rand Corporation has been contracted by the U.S. Office of Education to recommend a plan for the National Institute of Education.

to allocate its always limited resources among a wide-ranging set of alternative research and development programs and projects.

2. The National Institute of Education will (probably) support and conduct both conclusion-oriented and decision-oriented research and development; will (probably) support and conduct dissemination, training, and problem-solving activities; and will continually evaluate the state of educational research and development. To perform these activities, it must engage highly competent researchers and developers, research administrators, program managers, and support personnel and place them in an organizational structure that is rigid enough to establish responsibilities clearly, yet flexible enough to allow room for creativity. It must establish mechanisms, both formal and informal, to link the best judgments of the research community and of the education community to its program decision-making, and to assure that the results of its progrmas have effect.

3. The Nation's educational system consists of a vast multiplicity of organizations and instructions at all levels of government, and in the private sector. Local institutions--both private and public--are the primary locus of operations, but their performance is affected by both State and Federal regulations and support activities. A variety of Federal organizations support State and local activities. Therefore, a successful education research program must be guided, in part, by the needs and demands of this diverse and interacting system of actors and its outputs must be carefully designed to meet the needs of this system. The National Institute will not be the sole source of Education research and development support or performance: thus, it must establish relationships with other supporters and performers in order to improve the over-all effectiveness of the Nation's education research and development program.

4. The Institute's character and reputation will be shaped by the quality and direction of its initial activities. During its first year or two of operation, it will have to acquire staff, initiate new programs, arrange the transfer of Office of Education research programs, establish linkages to a wide variety of research performers and users, and demonstrate its ability to effect educational change. Several questions concerning those initial activities arise:

a. How rapidly should the Institute grow in dollars, personnel, programs?

b. What should its initial program comprise? How should the the projects be chosen so as to assure an effective beginning for the Institute?

c. How should the programs of OE's National Center for Educational Research and Development (NCERD) relate to those of NIE? In particular, at what rate and under what conditions should NCERD's program transfer to NIE? How should the ex-

perimental schools and targeted research programs
be transferred to NIE?

d. What can be done to attract first quality staff to the
Institute at its very beginning? (21)

While the need for a National Institute seems strong, there is considerable skepticism among many as to its success in being passed upon by Congress. Gallagher has pointed out that the N. I. E. is being proposed at a time when Congress has a basic distrust in any and all educational research, and to be proposing a new Institute devoted to educational research and development may be inappropriate at this time. Passing legislation authorizing the establishment of the N. I. E. is the responsibility of Congress, but such legislation must have greater support from those in the education field. Daniel P. Moynihan, Counsellor to the President, contends that the major educational organizations around the country have remained very quiet during the debate over the N. I. E. In an interview with Educational Researcher (ER), Moynihan drew a parallel, in terms of political support (and non-support), between the N. I. E. legislation and the far more visible, highly controversial Family Assistance Plan. Cornerstone of the Nixon Administration's domestic policy and what Moynihan has called the "most important piece of social legislation in the last 35 years," the Family Assistance Plan would scrap the present public welfare system, replacing it with income subsidies to both the working and non-working poor. Unexpectedly, it passed the House with ease earlier this year, then just as unexpectedly ran into trouble in the Senate Finance Committee. By early July, with the Committee still a barrier, Moynihan saw fit to deliver a tough talk to the Urban Coalition. In the course of it he assailed liberal groups and individuals, particularly social welfare organizations, for standing on the sidelines. "Sometimes," he said, "I think they don't want anything to work." To a more moderate degree, Moynihan believes the same situation prevails with the N.I.E. proposal.[4] (6)

Daivd Krathwohl, guest editor for the June, 1971 Kappan, gently prods his educational research colleagues by pointing out:

> It is clear to all that we must move the program of educational research and development to a whole new level of understanding, of funding, and of excellence. Our programs to date have not created among members of Congress, Administration policy makers, or practitioners the feeling of confidence necessary for substantial continued growth.
>
> A National Institute of Education would provide a new start: a structure more removed from immediate pressures: a higher caliber of administrative and research personnel; a more appropriate level of compensation for that staff; task forces and study groups providing better-focused effort; and an organizational arrangement that brings together the best of lay, practitioner, and research talent for research policy making. (18)

Until there is some movement from those involved in education, there seems little likelihood that the Institute will receive full Congressional backing. Also, holding back further Congressional consideration of the N.I.E. is the intention of Senator Claiborne Pell of Rhode Island and Representative John Brademas of Indiana in holding public hearings.

Should the ultimate decision be that a National Institute of Education is the best method to attain excellence in educational research and development, it is a very appropriate addition to the Department of Education, which was proposed earlier in this report. Moving education to a cabinet level status increases the effectiveness and prestige of the N.I.E. Recruitment of top scholars, in a variety of fields, would be greatly enhanced with the Institute's director directly responsible to the Secretary of Education.

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[4] Based on an interview between Daniel P. Moynihan and Educational Researcher. "D.C. Perspective," Educational Researcher, Vol. XXI (September, 1970), p.4.

The following section of this paper, dealing with Federal-State Working Relationships, would necessarily be strengthened by the introduction of the N.I.E. into the federal system. However, for purposes of this discussion, the N.I.E. is not considered in the following sections simply because details of the exact working structure of the Institute are not firm enough to build other institutional relationships into its structural objectives.

Federal-State Working Relationships

Providing institutional arrangements that will lead to school improvement necessarily involves levels of government other than federal. Under our current educational system, the federal government has delegated much of the responsibility for educational decision-making to the individual states. Traditionally, these states have operated somewhat autonomously from federal constraints, except in those instances where federal funds are being administered by state agencies. Issues that affect other states or might be of interest to other states are often not communicated inter-state or are mentioned at annual meetings of the Council of Chief State School Officers. Direct and frequent communication between state departments of education could be greatly improved to increase the flow of available knowledge as well as reduce the likelihook of duplication of effort.

If, as is proposed in this paper, the federal government is to play a more significant role in the field of education, communication among states becomes essential as does communication with the federal Department of Education. To provide such a communication network it is proposed that an Advisory Board of State Commissioners of Educational Services be established. As Exhibit 1 indicates, this Advisory Board would have direct and frequent interaction with the Secretary of Education in the U.S. Department of Education. The State Commissioners are to constitute an Advisory Board to prevent any line relationships from developing between the federal and state levels. Exhibit 1 also indicates, by dotted lines, task force working relationships between states. This means that individual states may find issues of common concern to other states but not to all states. This structure provides a framework within which issues of mutual concern can be dealt with at the Commissioners level. Programs of interest to State Commissioners for consideration by the federal department have a direct means by which to be communicated to the Secretary of Education. The Secretary also has direct access to each State Commissioner to discuss federal thinking and federally supported programs.

The Advisory Board of State Commissioners of Educational Services should be the mutual effort of each state and the federal government. Funds for the support of the Board should be contributed from the Secretary's funds as well as contributions from each State Department of Educational Services. Task forces should operate as the need arises, with formal Commissioners meetings held quarterly. Funds should be made available through this Board for use in research activities that are the result of Board interest. This Board is designed to be functional and, therefore, must have unanimous support at the federal and state levels.

Relationships of Education with other Agencies

If the Department of Education is to be responsive to the needs of the educational community, and if it is to provide leadership, it must have direct and frequent contact with those both in and out of the educational structure. Educators themselves are not the only ones with an interest in matters that affect education. Parents, special interest groups, unions and private industry have a great stake in the success of any educational program. One of the frequent complaints of those who deal with educational matters is the inaccessibility of officials at all levels in the educational system. This inaccessibility tends to increase the credibility gap between private and public organizations.

To provide open and continuous dialogue among the various groups that have interest in educational matters, advisory councils should be established at the federal, state and local levels. These councils are to be made up of industry representatives, parent and union groups, as well as special interest organizations. Such a system of advisory councils would begin at the local level and extend upward to the federal level. Within each community, organizations that have interest in educational matters are to have continuous access to educational officials. This same relationship works also to the advantage of educational personnel. They too would have access to those within the community who have special knowledge that will aid considerably in the operation and direction of community education. To provide state-wide access to state officials and private organizations, similar arrangements are to be made at the State Commissioner of Educational Services office. Those organizations having national concern with educational matters are to have representatives at the U.S. Secretary of Education office. Channels of communication between local, state and federal levels of these organizations would provide each level with access to education personnel at each level.

Such a system can be exceedingly valuable to the various public educational agencies. For example, if education should be interested in the development of new equipment and materials to satisfy new needs, it would have immediate access to those private firms that have production capabilities. From the point of view of private industry, information regarding shifts in federal, state and local policies would be immediately available. This would insure that industry and other or-

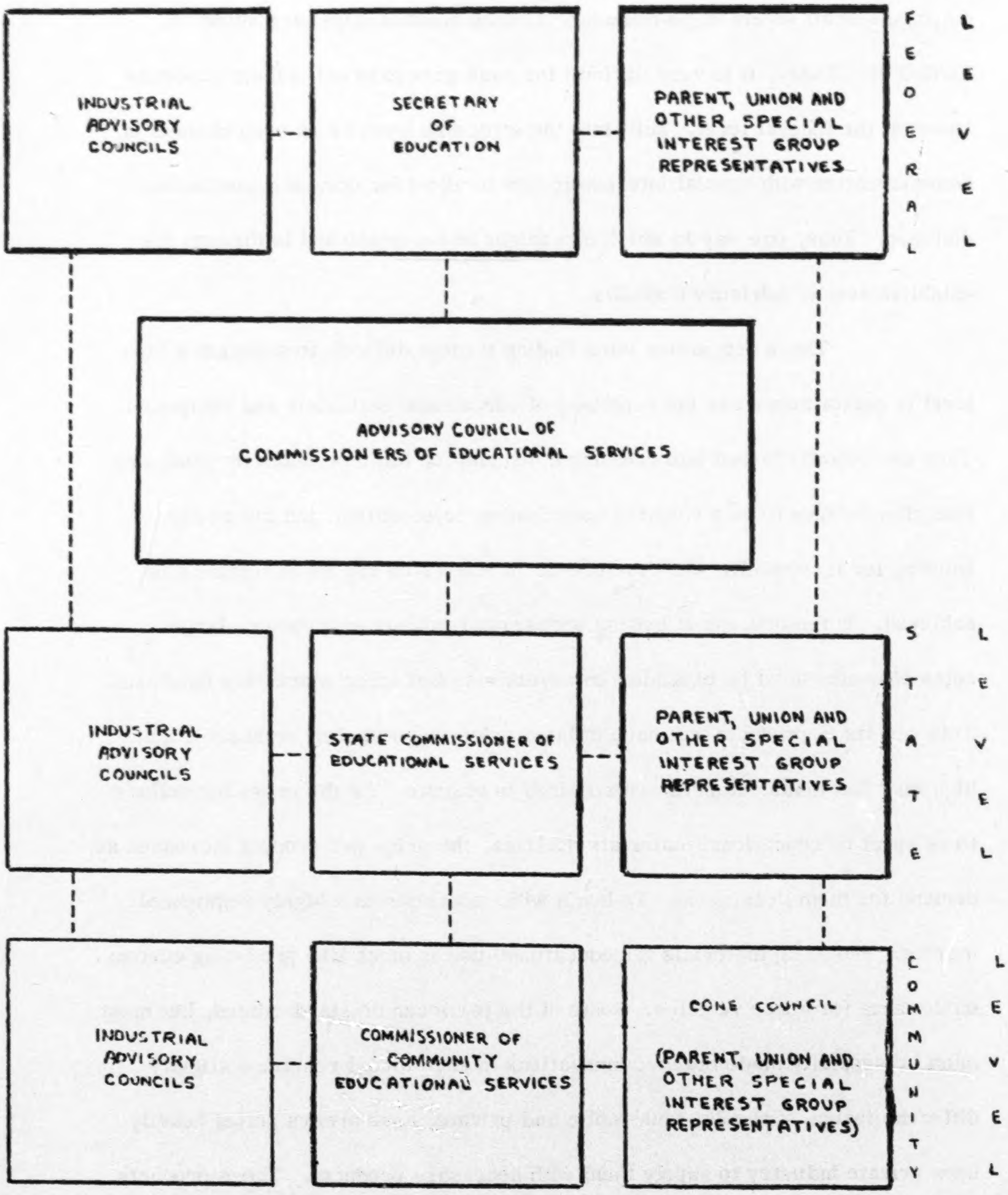

INDUSTRIAL ADVISORY COUNCILS
SECRETARY OF EDUCATION
PARENT, UNION AND OTHER SPECIAL INTEREST GROUP REPRESENTATIVES
FEDERAL
LEVEL
ADVISORY COUNCIL OF COMMISSIONERS OF EDUCATIONAL SERVICES
INDUSTRIAL ADVISORY COUNCILS
STATE COMMISSIONER OF EDUCATIONAL SERVICES
PARENT, UNION AND OTHER SPECIAL INTEREST GROUP REPRESENTATIVES
STATE
LEVEL
INDUSTRIAL ADVISORY COUNCILS
COMMISSIONER OF COMMUNITY EDUCATIONAL SERVICES
CORE COUNCIL
(PARENT, UNION AND OTHER SPECIAL INTEREST GROUP REPRESENTATIVES)
COMMUNITY
LEVEL

EXHIBIT NO. 2 : FEDERAL-STATE-LOCAL INTERRELATIONSHIP DIAGRAM ganizations be constantly brought up to date regarding new directions and emphases at all levels of government. (These relationships are shown in Exhibit 2). Today, it is very difficult for such groups to make their concerns known at the federal level. Built into the structure must be an open channel of communication with special interest groups to allow for open and continuous dialogue. Thus, one way in which this might be accomplished is through the establishment of Advisory Councils.

Those companies often finding it most difficult to maintain a high level of performance are the suppliers of educational materials and equipment. They are literally forced into creating a demand for their products by producing what they believe to be a valuable contribution to education, but not really knowing its acceptability until the product is marketed and its acceptance is achieved. In the process of getting widespread product acceptance, large sums of money must be expended on advertising and other marketing functions. This results in products that have inflated price tags attached because of the high risk that manufacturers are required to assume. As the press for dollars to be spent on educational materials declines, the price per product increases as demand for them decreases. To begin with, education is a highly segmented market. Providing materials for educational use is much like producing custom made parts for space vehicles. Some of the parts can be standardized, but most must be specially made beacuse innovations in each model require a slightly different design. Schools, both public and private, have always relied heavily upon private industry to supply them with necessary products. These products range over a vast area and amount to billions of dollars. Industry is frequently called upon to resolve problems for which education has neither the time nor resources to solve. Such relationships have proven profitable to both groups.

In the post-Sputnik years, private industry began moving heavily into the education field. Numerous consolidations and mergers occurred to provide a larger structure for capitalization and diversified talent within the same organization. Unfortunately, the great technological explosion that industry anticipated would take place in education never materialized. Industry soon realized that the amount of money required for research and development to produce technologically advanced educational materials was far greater than the potential market. However, it is not difficult to tell the size and nature of the education market. Of the $35 billion spent for elementary and secondary education in 1970, barely $1 billion, or about three percent, went toward textbooks and other teaching materials. The greatest share of the $35 billion went toward teachers' salaries. It is becoming even more clear that as teachers discover their collective bargaining power, salary increases will come out of those funds designated for the purchase of materials. Thus, the market for educational materials will rapidly shrink to the point where it is no longer profitable to expend large sums of money on research and development.

Reduced funds for the purchase of products is not the only factor making private industry reluctant to invest heavily in education. Francis Keppel clearly describes the educational market in this manner:

> Unlike the Department of Defense or NASA, with centralized policies and procedures affecting the industries that serve them, the education purchasing pattern is fragmented and diversified. There are over 20,000 school districts in this country, and within each district purchasing decisions are becoming more decentralized. Where once school materials may have been ordered through the office of the superintendent or principal, they now are ordered by department heads, curriculum specialists and groups of teachers. It should also be noted that the contracts won by both teachers' unions and teachers' associations are spelling out greater responsibilities for the teacher selecting the materials he uses. (14)

As an example of the fragmentation of the education market, Theodore Levitt states: "The New York School System is the nation's largest, with approximately 470,000 high school students. Yet it is too small either to underwrite the creation of a basic physics course or to encourage private companies to do it. Its ironclad promise to use and annually pay for the use of such a new course for the next 20 years, even without modifications in the course to include new knowledge during all that time, would not be sufficiently enticing to produce even a second sales call from the company eager to be its developer. Within any reasonable range of annual costs, no single school system is big enough to amortize the development costs."

The high cost of research and development is not limited to only a few organizations. Locke, in his Saturday Review article, points out that large firms such as IBM, Xerox and General Learning Corporation have retreated into a posture that closely resembles the conservatism usually reserved for education itself. He points out that because of large expensive bureaucracies, it may well result that the smaller producers of educational materials survive these lean times and later become the industry leaders.(24) The purpose of elaborating on the conditions of private industry is to point out that education relies heavily upon the creative effort of the private sector. If the private sector no longer anticipates an adequate return on its investment in educational materials, education in general will suffer.

An alternate plan must be found to encourage rather than discourage industry to become more involved in education. One way is to provide government subsidies for research and development work on projects that show potential for implementation in educational systems. Such subsidy programs, based on well defined proposals, could be administered by the Department of Education. Review panels made up of practitioners and theorists would be required to ensure compliance with sound learning concepts and specific needs of schools. Close coordination of projects would be maintained by department personnel and practicing teachers and administrators. A field program would need to be established so that no products were ready for distribution until rigorous testing was conducted under actual school conditions. The concept of public agency support is not an unreasonable expectation. Given the nature of the market, it may be the most productive way to insure continued quality in educational products. Keppel's reaction to such a plan is clear. "R &D... will have to be supported by public agencies. The present education industry can be a collaborator, if the public so desires, but is not to be depended on as a major contributor. (14)

Education at the Local Level

Education is an activity in which all members of a given community are engaged. As at the state level, each community needs to establish and organize its resources in such a way that they are available to all members of the community. To coordinate all educational programs, a "Department of Educational Services" needs to be established with the department head known as the "Commissioner of Community Educational Services."

The Commissioner of Community Educational Services has responsibility for more than the formal education of the community's children. It is his responsibility to provide a wide variety of activities to all residents of the community that will increase their individual knowledge of subjects they might not otherwise come in contact with. One of his greatest resources will be community television as a means of communicating community interest programs to large audiences. Use of such a resource is not possible today, but will be when we have discovered more effective methods of employing television as a cultural vehicle. The Commissioner's primary function is to provide the community with a rich cultural environment based on its individual needs and expectations. Included in this cultural environment is what we refer to today as the public school system. Schooling is not to be the same as education. It is only one segment of man's life of learning.

Since we have invested billions of dollars in the construction and furnishing of facilities for schooling, these same facilities should be used to provide community-wide educational opportunities. Each school unit could become the cultural center for the attendance area which it serves. Elementary school facilities could be employed, additionally, as community discussion centers as well as evening programs for continuing adult education. High school auditoriums could be used for community music festivals, plays, lectures and other activities of interest to residents to the area. Classrooms could be used year round for special interest programs to the community. Recreation facilities could be open to all members of the community after regular school hours and weekends. Today our schools are not being used to maximum advantage. Millions of dollars are being spent maintaining empty buildings during summer vacations. Recreational facilities stand idle as do chemistry labs, business machine rooms, typing rooms, libraries, lecture and group discussion areas as well as shop and home economics facilities. We have traditionally thought of school grounds as being reserved only for children when they are equally well designed and should be available for all community events.

Schooling under the direction of the Commissioner of Community Educational Services is not to be slighted. The reason for combining all cultural activities under one authority is to broaden school programs already in existence. Schools are not to be considered baby-sitting centers or warehouses of potential talent. They are designed to be the center of all community activities involving adults as well as children. They are not to be thought of as sources of "future" talent, but are to be existing sources of "current" talent. The commissioner is to have responsibility for insuring that every child and adult has equal access to educational resources and to insure that each individual has the freedom to learn what he has determined to be important to him.

Urban Education

One of the greatest problems facing the Commissioner of Community Educational Services is the difficulty for learners in urban areas to obtain an education equal to that acquired by learners in the suburbs. Urban centers have suffered, in recent years, from a declining standard of living as the more affluent residents move to the suburbs in search of a different way of life. As a result of this exodus, property values have declined, allowing for lower socio-economic groups to be able to afford to move into these areas. Since today's residents of urban centers are generally poorer than their predecessors, contributions to local taxes decline. This includes property taxes which are the mainstay of educational support. The result is that inequalities are created between the opportunities available to inner city children and those available to children in suburban communities.

Equality of opportunity is by no means a new topic. Some believe the next decade of education should be concerned with "quality" of education rather than "equality of opportunity." It is the belief of the writers of this report that the need to concentrate on equality of opportunity for all people to obtain an adequate education has by no means ended. There is much yet to be done before there is equality of opportunity in education.

Inner city school systems have become massive bureaucracies that are less and less able to cope with the changing needs of those they serve. It will be necessary to change the basic structure of the local school system, rather than merely reassign existing personnel. Many school districts are already involved in such changes through decentralization. However, such changes are often administrative reorganizations and do not necessarily improve the plight of the student in the classroom. Janowitz speaks of "segmental change" that has taken place in American education. There have been numerous attempts to non-grade, multi-grade or provide for continuous progress. The disappointing fact is that these pockets of innovation have been funded for short periods of time without proper testing of their effectiveness. (13) An overall plan needs to be designed to restructure all levels of urban education. The plan described in the following pages is an attempt to bridge the gap between urban and suburban schools. This plan fits into many decentralization programs that are being discussed today.

The Cone Concept

Developing a new strategy to deal with urban education is no simple task. It is doubtful that any one plan will be appropriate to all urban centers. A major roadblock is the rigid educational bureaucracies that have long standing operating procedures that tend to render ineffective new ideas. To improve education in the inner city, there must be structural change.

> Urban schools are not going to be rebuilt as effective institutions unless we first sweep the deck of existing organizational structures and practices which constitute fundamental obstacles to the attainment of educational goals. As Morris Janowitz points out... specialists and technologists have a vital and indispensable part to play in reforming urban education, but piling more specialists and new technologies on top of an already overloaded institutional structure will compound rather than alleviate our problems. What all this boils down to is the old rule of first things first--and the first priority of urban education is to introduce new concepts of organization and bureaucracy that emphasize the creation of authentic institutional communities so that specialization and technique are not plugged into essentially dysfunctional vessels. (23)

With importance placed on the need for some form of structural reorganization of urban school systems, the Cone Concept is presented as a means not of "isolating" the urban schools from the rest of society, but of developing a community-wide approach to problems of both urban and suburban schools. It is not realistic to assume that urban schools can solve their own problems in isolation from the rest of society. Short of stopping and literally rebuilding urban centers, little progress will be made in resolving massive educational inequalities without a community-wide approach. Since education is actually a complex social system, it must be seen as a part of a much larger system encompassing all of society. Education must interface with these other systems. As Havighurst has pointed out, "The school system does not operate best if left to itself in a way that is more proper to a fire department, a water department or other systems that carry out more discrete functions. (10) The Cone Concept is designed to show what could be done to bring urban and suburban schools together to approach a community-wide solution to urban school problems.

The objective of the Cone Concept is to provide an open system in which schools from the inner city to the suburbs are joined together as an integrated unit.

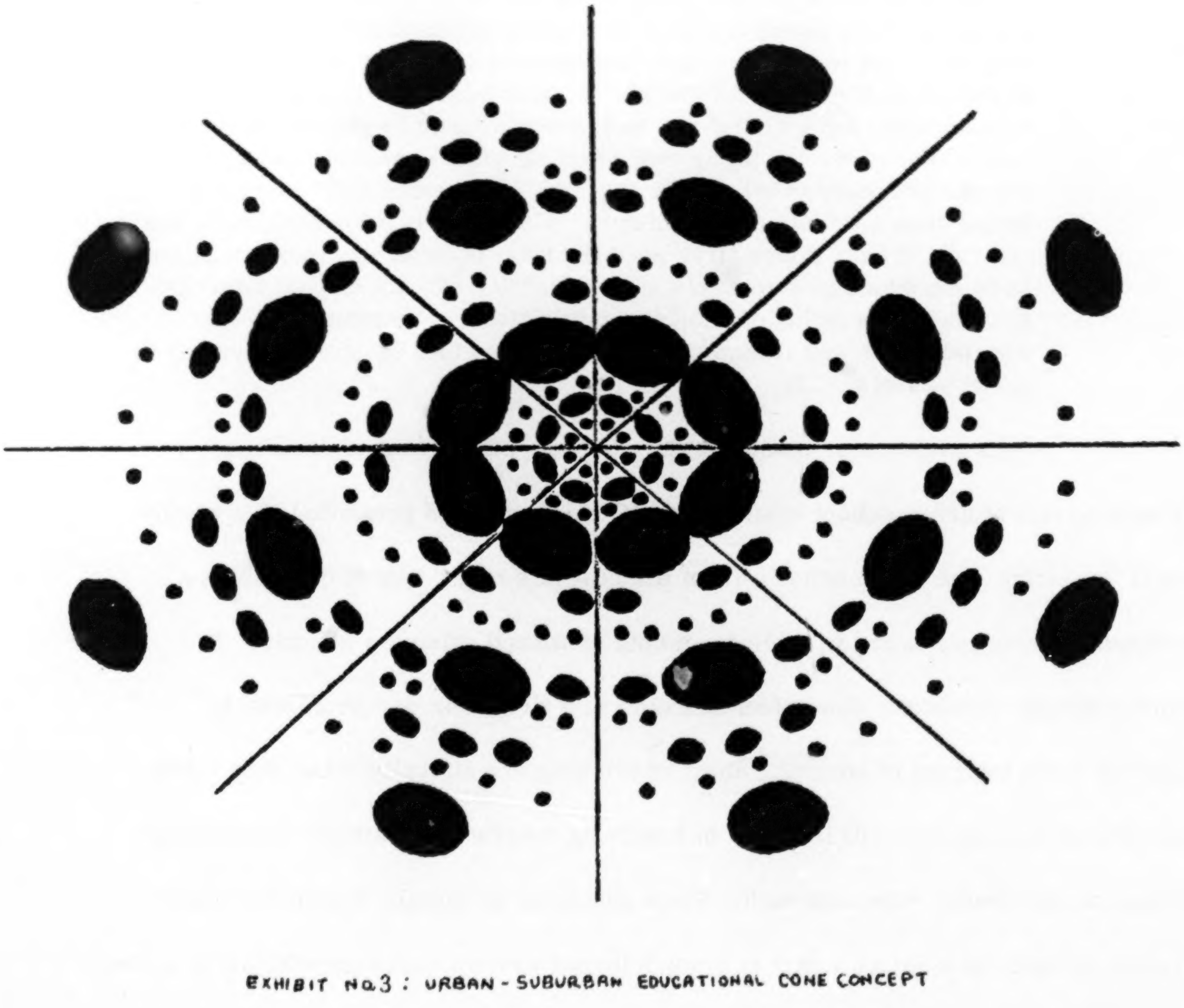
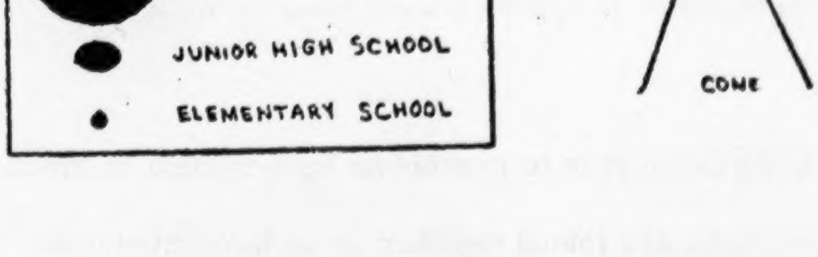


EXHIBIT NO. 3 : URBAN - SUBURBAN EDUCATIONAL CONE CONCEPT


HIGH SCHOOL
JUNIOR HIGH SCHOOL
ELEMENTARY SCHOOL
CONE

The cone begins with an inner city unit which includes a high school and its "feeder" junior high and elementary schools. Exhibit 3 describes this system diagramatically. It will be noted that the diagram is an idealized view of the Cone Concept itself rather than the actual layout of a school system. The object of the diagram is to show the vertical relationships between cone units, that is, a given high school and its feeder junior high and elementary schools. In actual operation such a diagram would not be symmetrical, but would conform to geographical as well as political boundaries. However, it is quite likely that a given cone may overlap present school district boundaries. Immediately following one cone unit is another cone unit until the outskirts of the suburb are reached. Using each inner city unit as the beginning of a different cone, all schools are thus linked together from the urban center to the suburb. Within a given cone, all curriculum programs are coordinated so that a learner moving from the elementary level to junior high to high school does not stop and restart with each level change, but is provided with a cohesive educational plan from kindergarten through high school.

Within each cone, teachers, administrators and students have access to all materials, equipment and facilities on a shared basis. Students move freely from one level to the next without experiencing "graduations" at each traditional level change. The open nature within a given cone permits learners to maximize their individual talents as they move vertically through the system. One of the failures of most school systems today, urban or suburban, is the lack of vertical continuity between elementary, middle and high schools. Students often find themselves repeating materials they have previously learned when they move to the next grade level. This is especially true when their grade level change requires a physical move to another school facility. The Cone Concept is essentially based on continuous progress learning with attention focused on individual achievement.

Within a given cone, inner city learners have equal access to and the use of materials, equipment and facilities that every other learner has within that cone. Students, as well as teachers and administrators, are encouraged to organize and participate in activities developed to involve all the students within each cone. Discussion of urban-suburban problems, action groups designed to provide a means by which those in the cone can attack mutual or special problems, are encouraged. Peer group teaching is to be a regular part of the program, encouraging students with special skills and talents to aid other students within their cone unit.

The logic of the Cone Concept, involving as it does the sharing of mutual resources, requires some basic changes in the local administration of educational finances. Since each cone is centered around an inner city school and fans out to include suburban schools, under present districting arrangements the largest concentrations of funds for local education would be found at the outer reaches of the cone where tax bases are greater. In order to fully realize the benefits of the Cone Concept a system of local school financing based on the sharing of tax revenues within a given cone is necessary. Thus, the revenue for education available from overall tax funds within a cone would be pooled and redistributed according to specific school needs, again within the cone itself. This structure necessarily involves some sacrifices on the part of formerly self-contained suburban districts with substantial tax bases. However, this plan should reduce long-term expenditures for education in a given area, since facilities that formerly belonged to only one district can be utilized to serve several former districts under cone coordination. Most importantly, whereas now a single school district may, be virtue of its large tax base, enjoy a much higher quality of schooling than an adjacent district, the combining of these districts under the Cone Concept enables a more equitable distribution of educational resources. These resources will then be mutually available to all the schools in each of the former districts.[5] (1)

Key administrative and faculty leaders will need to be identified in each cone unit to provide for a unified administrative structure. Considerable retraining of existing personnel to assume these key roles may be necessary, or it may be necessary to bring in new people to fill these positions. Teachers will require new skills in instructional methodologies designed to provide students with individual continuous progress throughout their educational program. New vertical relationships will have to be established between traditional elementary and secondary school personnel. Later in this paper a discussion will focus on the essential need to involve members of the entire community in this program. It is unwise to attempt any societal restructuring without open and continuous dialogue among all those who will be affected by a large -scale reorganization.

Each cone, while vertically related, is to be horizontally related based on student age levels between cones. A "Peer Group Strategy" is to be employed much like that developed by the |I|D|E|A| Research Division's League of Cooperating Schools. In the League of Cooperating Schools, teachers from elementary schools in 18 different school districts have developed an information exchange system. League teachers with mutual interests are brought together to discuss problems and exchange solutions. Workshops and other activities are

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[5] A plan which resembles the Cone Concept has been advanced by Robert Bendiner, The Politics of Schools. New York: Harper and Row, 1969, (Part 4).

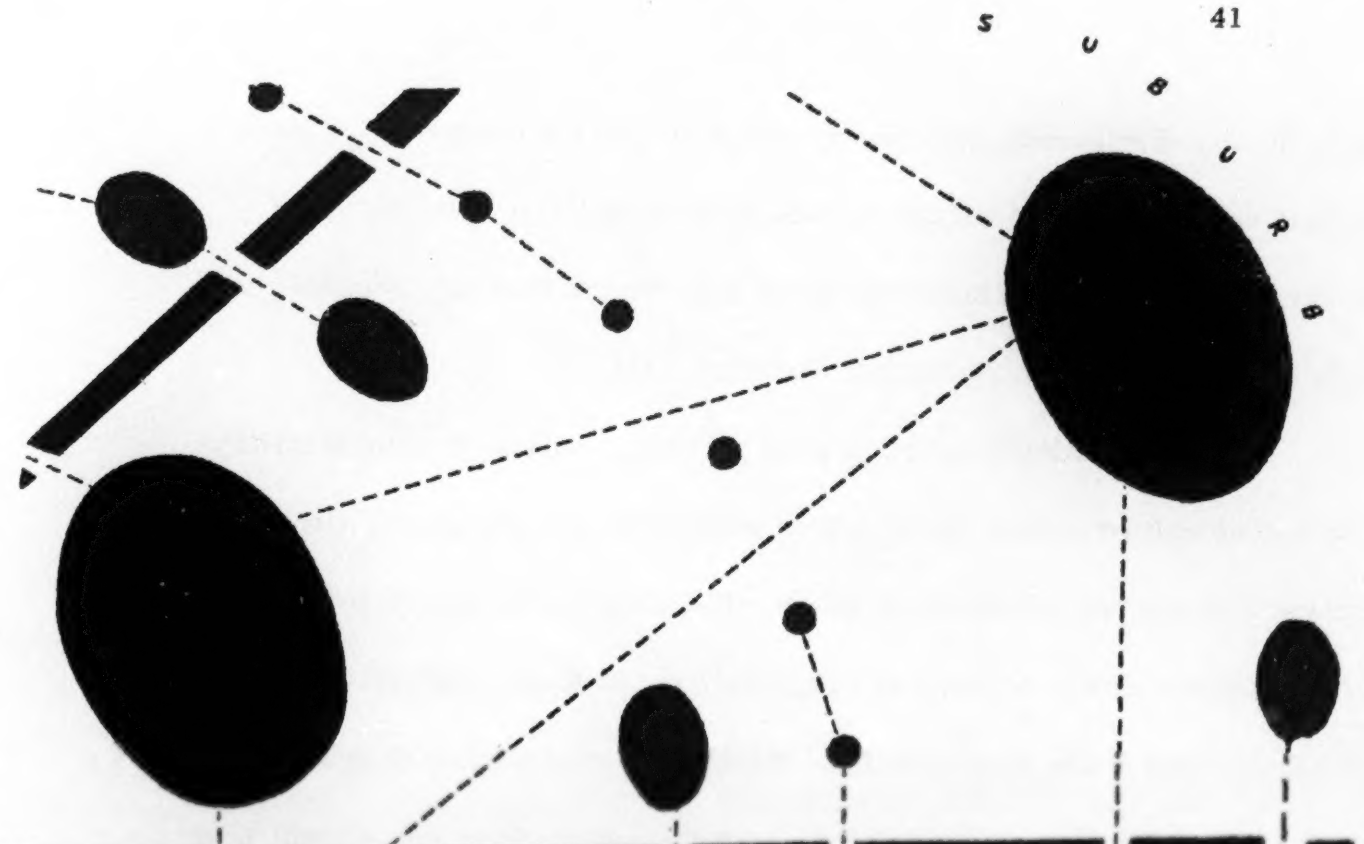

SUBURB
INNER CITY
SUBURB

EXHIBIT NO. 4: CROSS-CONE PEER WORKING RELATIONSHIPS FOR FACULTY AND ADMINISTRATORS

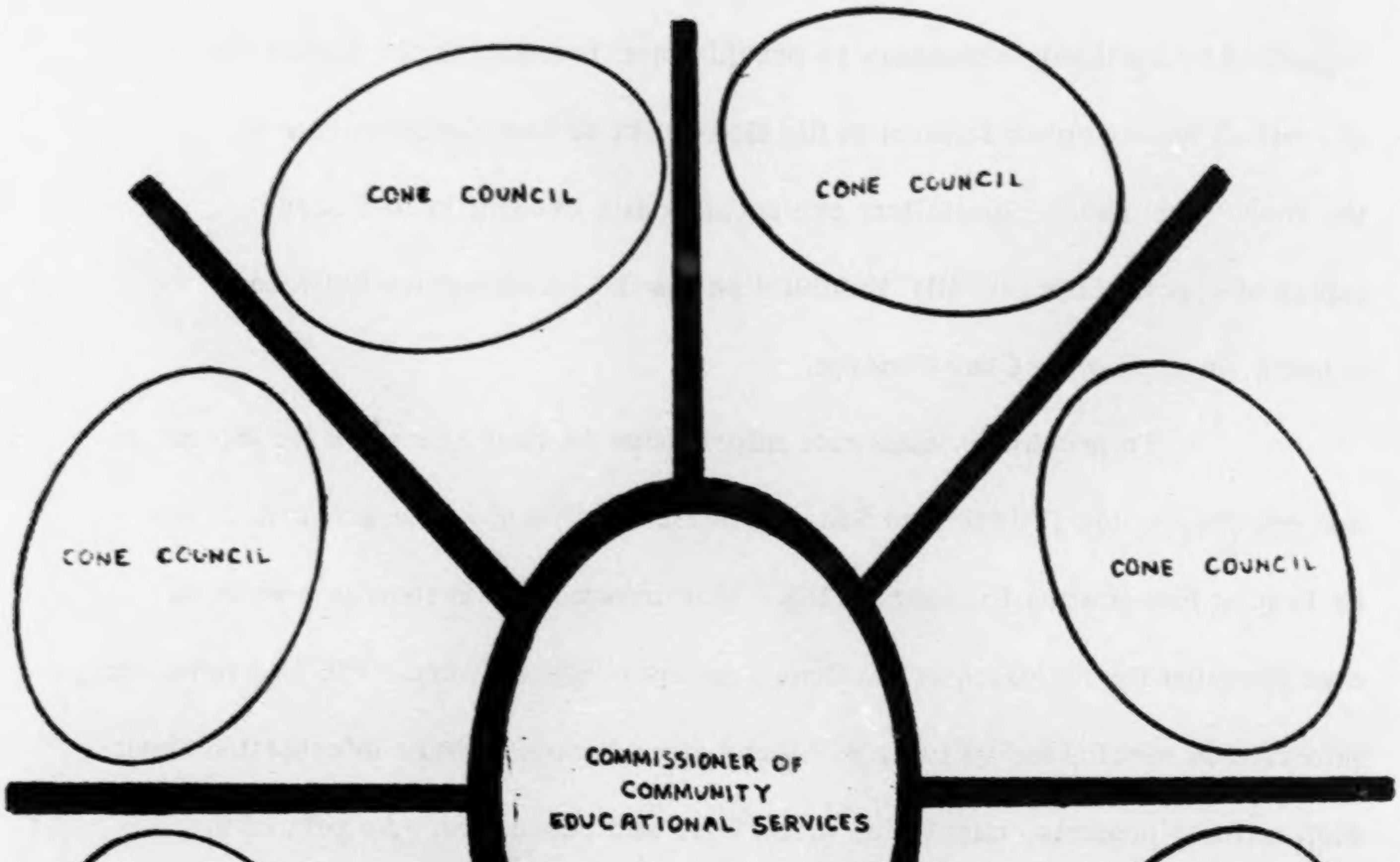
⬬	HIGH SCHOOL	▬	CONE BOUNDARIES
⬮	JUNIOR HIGH SCHOOL	– – – –	CROSS-CONE RELATIONSHIPS
•	ELEMENTARY SCHOOL		

organized by the League teachers to provide open forums for the discussion of critical issues either to them in the classroom or new developments in the educational field. Specialists are occasionally brought in to discuss topics of special interest. (11) Exhibit 4 shows the relationships between schools employing the Cone Concept.

To provide an elaborate information exchange network for materials and equipment, the Philadelphia School District has developed a program known as Project Information Exchange (PIE). This information system is worthy of consideration for inclusion in the Cone Concept presented here. PIE is a developing information service meant to help Philadelphia educators share information about instructional projects, curricula, materials, and resources. As part of instructional services, PIE is guided by a broad-based steering committee--teachers, principals, district staff and central administrators. Operationally, PIE consists of:

1. PIE catalog - "yellow-pages" type of index reviewing projects and materials from within and without the school district. The catalog is published each fall.
2. Data bank - free materials (curricula, project reports, articles) which can be ordered from the catalog. All materials are sent within several days via school mail directly to schools or offices.
3. Information telephone (24-hour) - by which materials may be be ordered or other information requested.
4. Links with other information resources - such as the pedagogical library, office of informational services, etc., and national resources such as ERIC.
5. PIE-LINE - a monthly information-update column which appears in News and Views (monthly newsletter for the Philadelphia school district). (37)

It was suggested earlier in this paper that a series of learning centers, organized around a central regional computer facility, might be implemented on a time-sharing basis. These same facilities could be used to provide an information data bank similar to that provided by PIE.


CONE COUNCIL
CONE COUNCIL
CONE COUNCIL
CONE COUNCIL
COMMISSIONER OF COMMUNITY EDUCATIONAL SERVICES
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CONE COUNCIL

EXHIBIT NO. 5: THE CONE COUNCIL AS A DECENTRALIZED UNIT OF DECISION-MAKING

CONE COUNCILS ARE MADE UP OF REPRESENTATIVES FROM EACH CONE UNIT AND INCLUDE: PARENTS, STUDENTS, SCHOOL OFFICIALS AND PRIVATE INDUSTRY.

With time-shared computer consoles installed in each school, teachers could request and receive information regarding materials and equipment available in seconds. Data could be organized so that materials and equipment within cones are provided, as well as that available between cones. The same computers available for student use could be allocated to a teacher information exchange as well.

The Cone Council

While each cone is designed to provide an open environment for students, teachers and administrators to interact, it also must be responsive to the needs of each "unit" within the cone. It would be unfortunate if any one unit within a cone either within the inner city or in the suburbs became the central point determining the activities within the entire cone. To provide an equal voice for all persons and to maintain as much community control as possible, a committee made up of cone representatives is to be established. This committee consisting of parents, school officials, students and other interest group representatives is to meet regularly to determine program directions and changing needs of all units of the cone. In addition, this committee is to meet regularly with the Commissioner of Community Educational Services to provide his office with current information regarding the functioning of each cone system. Each Cone Council is designed to be a decentralized unit having decision-making authority including allocation of both financial and personnel resources. (See Exhibit 5)

Career-Oriented Education for the Inner City

In discussions relating to problems facing inner city learners, grand schemes for reorganizing existing educational structures are frequently advocated. The one area that seems to get least attention is that of the learner himself. What will his future be in an increasingly technological society? How will a child, just beginning school in an inner city, be prepared for a satisfying and productive life? Earlier in this paper it was pointed out that the likelihood is great that it will be necessary to change occupations several times as technology changes and needs of society are altered. In the decade ahead, the greatest emphasis will be placed on occupational flexibility. In order to adequately prepare a labor force that has talents that will be essential in the future, it seems logical to begin preparation at a very early age. Venn describes the needs of our society in the following manner.

> In the new technological society of the future, all instruction will have value for occupational purposes. The changed nature of work and the career role that work will play in the future, as contrasted to a job solely for income purposes, could become a basis for study much earlier in the educational experience. The fact that a career in the future will mean several changes in specific jobs or occupations during a lifetime mitigates against the old concept of vocational skills as sufficient for specific jobs that will last a lifetime.(35)

Venn suggests that career awareness should begin at a very early age. The Research and Policy Committee of the Committee for Economic Development has made a strong appeal for beginning career preparation for children in primary schools. It is their contention that information and counseling needs to be a major part of a child's total education package. It must be clear to him that education does not simply mean schooling, nor can be adequately prepare himself for future occupations by merely concentrating on academic programs to the exclusion of vocational preparation.(35)

> The separation of functional (vocational) education from academic education must be overcome. The person who has only an "academic" education has important options closed to him just as does the person who has a strictly vocational, "non-academic" education. Alfred North Whitehead insisted that "education should turn out the pupil with something he knows well and something he can do well." A good vocational-technical education is one in which academic pursuits

> are part of a package that includes but is not limited to occupational skills, leading by way of work experience to employment. We cannot deny that vocational education as presently constituted and pursued is second class. But we believe that the integration of vocational and academic education can greatly reduce the differences between them while improving both. Vocational education without the humanities and social sciences is seriously deficient.(35)
>
> The basic purpose of the career-oriented approach is not to force students to make an early selection of a specific career, but rather to make all young people aware of the options available to them. The school then becomes the vehicle for achieving their goals rather than a prestructured institution to which they must adapt.
>
> The basic concept is that education for the world of work means fundamentals, adaptability, and skill flexibility. This is what every student needs. We also know that people learn best when they have success, the rewards for their efforts are immediate, and their efforts are relevant to their immediate and long-range goals.
>
> The idea that a general education will suffice in the future is eighteenth-century logic; it does not fit with what we know about the nature of our present environment. In the future everyone must receive occupational preparation and training; the only question is when it should take place.(35)

A career oriented program cannot function effectively without assistance and guidance from the local community. Industrial plants, medical facilities, federal, state and local agencies, and retail merchants should all become part of the overall career program. Counseling and guidance should become a critical part of any program designed to assist inner city students attain desired higher education degrees or satisfying careers.

A program initiated within the State of California, designed to assist Chicano students in inner cities, called Career Opportunities for Youth (COY) has emphasized the discrepancy between academic and vocational training. Career Opportunities for Youth, Inc. is a non-profit corporation working in small chapters located within aerospace facilities such as TRW and Hughes Aircraft, which are both located in Los Angeles, California. The objective of COY is to provide a community oriented source of information regarding career opportunities for Chicano students. It has been the experience of COY that Chicano students, as well as other minority students, are encouraged to pursue vocational programs at the early stages of their educational experience. By the time they realize what careers and further educational pursuits have been closed to them because of their lack of academic subject background, they feel it is too late to retrain in a different direction. Frequently, we hear and use the phrase "high school dropout." Because of the counseling and guidance given to Chicano students, COY contends that students are being "pushed out of high school." COY is attempting to assist students in understanding what careers are available to them and the equivalent education they need to be successful in these careers. In contrast to many youth programs, COY is working with students before they separate their lives from school. To provide stimuli to remain in a program leading to higher education or a satisfactory career, COY provides Grants in Aid to Chicano students in high school or higher levels.

The programs conducted by COY for Chicano youth are just one example of many grass roots projects being initiated for inner city youth across the country. While these programs are generally quite helpful, they only serve to point out the lack of career guidance provided by employed school personnel. Programs such as COY would not be necessary if proper attention were given to the problems of minority groups not only by school officials but also by community resource people.

Section III: Effective Teacher Training Institutions for the Future

Introduction

A basic assumption that underlies the previous section of this paper is that the quality of life in America in the 1970's will be determined in part by the quality of educational and schooling opportunities that are available to the citizenry. But the quality of the schooling and educational system rests in large part on the quality of the teaching that is found in these systems.

The task of providing adequately prepared teachers for America's schools has been delegated to the teacher training institutions found in the American colleges and universities. There is reason to believe that the quality and effectiveness of America's teacher training institutions has left much to be desired.[6](5) At this point we would like to discuss the improvement of teacher training institutions, particularly as they relate to the improvement of the schooling and educational system.

Assumptions about Teacher Training

Before examining why teacher training institutions have been generally ineffective, we would like to list some distinctions and assumptions that are inherent in the discussion that follows:

1. A distinction should be made between a teacher institution and a department or school of education.

Teacher training institutions are those programs that have as their specific goal the preparation of teachers for school classrooms or other educational institutions; their sole purpose is the professional training of those individuals who will man the nation's schools and educational system.

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[6] A number of critics have commented on this. Perhaps the most influential has been James B. Conant. The Education of American Teachers. New York: McGraw-Hill Book Company, 1963.

Schools or departments of education are a larger entity, one part of which normally is a teacher training institution. The school or department of education is charged with the examination and teaching of the phenomenon of education. It often carries sub-components such as educational psychology, history of education, sociology of education, in addition to teacher training. In many respects, the role of these other sub-components is supportive of and complementary to the teacher education institution. For example, research conducted on the sociology of the classroom in the school of education may well have implications for the preparation of teachers. The main focus of these other sub-components in many universities, however, is on research and the teaching of researchers.

2. An assumption that underlies this section is that effective teachers are the combination of natural teaching talent and the learning of the techniques and skills of teaching. There is such a thing as an effective teacher just as there are effective surgeons, artists, musicians, actors, and engineers.[7] Indeed, it is useful to compare the development of a skilled artist and a skilled teacher. Skilled artists generally are a combination of natural talent and extensive study under the guidance of skilled teacher practitioners. Few, if any, artists are sufficiently talented that they cannot improve from continuous study and practice. It is the task

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[7] The precise definition of an "effective teacher" is difficult to determine, as anyone who delves into the research literature on this topic will quickly discover. For purposes of this paper, an "effective teacher" is defined as one who possesses, in addition to a good preparation in the subject matter, the ability to diagnose learning difficulties, identify appropriate teaching strategies and to practice skills appropriate to the selected strategies.

of art schools and institutes to identify those who have artistic ability and to provide systematic and intensive instruction by skilled teacher-practitioners. What is true of artists is to a large extent true of teachers. Those with a natural talent for teaching can benefit from careful and extensive training under the guidance of skilled teacher-practitioners. As with art schools or institutes, a major singular function of teacher training institutions should be the identification of teaching talent and the providing of technical instruction by skilled teacher practitioners.

3. The techniques of teaching can be defined as those skills which enable a teacher to achieve instructional goals. They include such skills as the ability to lead small group discussions, to pace instruction according to the needs of students, to dramatize presentations, to use instructional media, to utilize appropriate reinforcement techniques, to understand and utilize instructionally the social system of the classroom, and to develop and use instructional strategies.

4. It is very important that those who profess to teach a skill be proficient practitioners of that which they teach. In almost any professional school, one can think of those who instruct a technical skill as being themselves skilled practitioners of that skill. Generally, for example, those who teach surgery are skilled surgeons, those who teach the various musical instruments are skilled performers on those instruments.

It is a depressing irony that those who teach others how to teach are themselves often such poor teachers. Indeed, a common criticism of professors of teaching by their former pupils is that their teaching professors were superb examples of what not to do in a classroom.

It should not be inferred from the above comments that anyone who performs a particular skill well is therefore a good teacher of that skill, or that he has to be a first rate performer. Instead, one who professes to teach a skill should be a competent performer of that skill.

The Present Status of Teacher Training Institutions

There are probably few institutions that have been subject to as intense and constant a barrage of critcism as have teacher training programs in schools and departments of education across the country. There are probably few institutions that have survived so many years of criticism and changed so little.

This is particularly startling when one considers that the critics of teacher training programs have not limited their remarks to scholarly or professional journals. Indeed, the writings of such critics as Myron Lieberman, James B. Conant (5), James Koerner (15), Martin Mayer (26), and Charles Silberman (33), have had widespread circulation and have stirred public debate. Unfortunately, such debate has usually ended in despair. And teacher training programs have continued to perpetuate the sterile, boring, and unrealistic programs their critics have pointed out (32).[8]

The graduates of these institutions generally share the pessimistic views voiced by these critics. Indeed, it is rare to find teachers who have very favorable comments to make about their teacher training. A constant comment in their criticism is that the program did not prepare them for the realities of the classroom.

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[8] The negative opinion of teacher training graduates and the low status of teacher training institutions in the university structure is likely more than a function of just the real or imagined inadequacies of the programs offered. Indeed, such institutions have inherited a legacy of mediocrity from the past, and it is difficult to overcome a poor reputation regardless of efforts to reform. The culture of the university serves to continually reject the presence of teacher training from its midst. For an excellent discussion of this problem see Seymour B. Sarason's The Culture of the School and the Problem of Change. Boston: Allyn and Bacon, 1971, pp. 49-58.

They often attribute whatever teaching success they might have achieved to learning from hard experience in classrooms or picking up the teaching lore from colleagues. Seldom do they credit their formal preparation for their success.

The attitudes of students who study under the teachers who are the products of America's teacher training institutions give further evidence of the ineffectiveness of most typical teacher training institutions. The alienation of youth from the schools is due in part to the formal, rigid "mindlessness" that is perpetuated by the graduates of current teacher training programs. Such an alienation might be lessened if teacher training programs were more adequate to their task.

Some Problems Affecting Teacher Training

Why have teacher training institutions been so ineffective? Just about everyone has his own reasons as to why this is so. The following is a selected list of some that have been given:

1. One problem has been the "status crisis" that education faculties have faced on the university campus. The low position of schools of education in the university "pecking order" has been well documented. In an attempt to improve their image, education professors have tended to focus their attention on activities that are most esteemed by their colleagues, i.e., writing, publishing, research, and by identifying themselves with more established disciplines, e.g., psychology, sociology, mathematics. By so doing, education professors in teacher training have tended to ignore what should be their primary activity, i.e., the studying and practicing and teaching of the science and art of teaching. As was noted earlier, professors in other professional schools, i.e., surgery, law, music, art, drama, are usually skilled practitioners of the art they teach. Such is often not the case with professors of teaching. Teachers of teaching spend little, if any, time honing up their teaching

skills (an activity that would seem a prerequisite to anyone who claims to teach teaching). Nor do many teacher training institutions place a heavy emphasis on the teaching ability of those who are selected on the faculty.

2. For many years there has been a teacher shortage. As a result, programs in teacher education have been established in just about every institution of higher learning in the United States. This has required a large number of faculty members and there simply has not been enough talent around to adequately man such a vast enterprise. Unlike the faculties of many other professional schools, e.g., medicine, law, who "hold the line" on the number of schools that can exist, teacher training institutions have attempted to fill the need without really shoring up the quality of their programs. The result has been mediocrity.

3. People who have served on the faculties of teacher training programs have been recruited largely from the teaching profession. This has had a twofold effect on the quality of the teacher training programs.

First, they have tended to perpetuate mediocrity by hiring those who were the graduates of their own programs. This creates a system that, in the opinion of some, has formed the basis of an inbred, tightly controlled "Education Establishment."

Second, the members of the faculty have tended to focus on the problems of schooling and how one maximizes performance in a standard classroom. A faculty member's legitimacy has often been questioned if he has not had classroom experience. Scant attention has been paid to whether the faculty member has or can demonstrate the fundamental skills that are directly related to one's ability to communicate or teach. Thus, the techniques and skills of such related topics as drama, art, speech, writing, and music have not been represented in the reservoir of talent available on the faculty.

Few teacher training institutions have included on their faculty persons who have these skills and who could improve the ability of prospective teachers to improve their teaching by dramatizing their presentations of subject matter, conducting small group discussions, using art as a means of clarifying a presentation, using audio and visual techniques to communicate. It is a telling criticism of teacher training institutions that they have not been in the forefront of the development of new and effective teaching programs and techniques.

Indeed, part of the reason that educational television has had such a minimal impact on the American public has resulted from it being directed by those whose background was limited to the standard classroom techniques. For years, the level of innovation has been limited to transferring the standard lecture from the classroom to the television studio.

The emergence of Sesame Street marks a breakthrough in the use of drama, music, literature, cartoons, and humor as a means of educating. Just as Sesame Street reflects the pooled talents of skilled practitioners in a variety of fields related to teaching, so the faculties of teacher training institutions should consist of skilled teacher practitioners of these various fields. It follows that the product of such teacher training institutions should be skilled in the techniques of teaching that are now emerging as being very effective in instruction.

Proposals for Designing Future Teacher Training Institutions

1. There is a growing need for institutions that have as their main focus the training of persons who are skilled teachers. This need is being expressed not only by America's school system but from other institutions as well. Television will be moving increasingly into the educational field and will need centers where

skilled practitioners can be trained. Likewise, industry has a need for a place to develop inservice programs. Perhaps one of the most telling ironies is the growing interest of many university academic departments and professional schools for increasing the quality of instruction offered in their institutions. As they presently exist, teacher training institutions are simply not prepared to provide the technical know-how that is being demanded.

Thus, a primary recommendation we must make is that teacher training institutions set as their main function the development of programs and faculties that can provide the expertise and the teacher talent so desperately needed.

In developing such an organization, the institution should begin recruiting as faculty members those who are skilled teachers and/or are skilled practitioners of teaching related skills, e.g., speech, art, drama.

No one who is associated with imparting specific teaching skills should be included on the faculty who is not himself a skilled performer and teacher of what it is he proposes to teach. A major criterion for selecting students should be a measure of natural teaching talent. Such measures, of course, are difficult to come by. It is reasonable to assume, however, that simulation techniques or other devices can be developed whereby a prospective teacher's talent can be assessed to some degree.

The lessening of the demand for teachers should make it easier to bring these changes about. A consolidation of teacher education faculties plus an opportunity to be far more selective in student enrollment should serve as a major impetus to improving the selectivity of faculty and students of teacher training institutions.

2. Teacher training institutions should carefully weigh the relative advantages of remaining in the university setting. The university environment has

some advantages, e.g., access to library resources, teaching-related research. However, there are a number of disadvantages, e.g., the status problem mentioned earlier, the isolation of the university from the urban center, and its foreboding structure and the tendency for this structure to frighten away prospective students.

There might be some advantage for teacher training institutes to align themselves with the large urban centers, perhaps utilizing the "cone concept" (discussed in Part II) as a training entity. What is absolutely vital is that some organizational pattern be developed that allows teacher training institutions to develop into centers of technical excellence that will provide a major source of the expertise needed to make the educational and schooling system more effective.

3. The mission of the teacher training institution should be expanded to include the provision of technical knowledge to both the schooling and the educational system. This may necessitate the development of a separate program for the training of school teachers (somewhat similar in design to the ones now in existence) and a second, more open system available to anyone who wishes to utilize its resources. Examples of such needs would be an industry with an inservice program, a business that wants to use teaching techniques to communicate the proper use of its product to customers, academic departments or professional schools that would like to improve the quality of teaching in their programs (25).[9] Perhaps these two emphases could be combined into one general program.

Certainly, a major thrust of the program would be the development by the development by the teacher training institution's staff of innovative, creative, and effective teaching techniques to be utilized by them in their own courses. Indeed, a major criterion of the effectiveness of the teacher training institutions would be the high technical quality of its own programs.

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[9] Some deviation of England's Open University may prove a viable mechanism for allowing non-degree students and clients to participate in these activities of the teacher training institution. See Stuart Maclure's "England's Open University," Change, March-April 1971, pp. 62-79.

4. One of the most effective ways of teaching the skills of teaching is to have students practice their profession under the observation of a skilled practitioner in an actual classroom. This activity, normally referred to as student teaching or practice teaching, is consistently rated by practicing teachers as the most useful activity in their teaching training. In order to maximize this opportunity, it is recommended that a league of cooperating schools and agencies be established around each teacher training institution where leagues of schools and agencies would provide classroom and other institutional settings in which students would practice their teaching skills.

5. The membership on the staff of the teacher training institutions should include a sizeable percentage of excellent teachers who are on one-year clinical appointments to the staff. This would be on a rotating basis. It would serve to insure a continuing supply of experienced teachers who have recent classroom teaching experience (20).[10] This plan would help to eventually revitalize the "relevancy and recency" of the teaching staff (4, 30).[11]

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[10] A similar but more comprehensive plan has been developed by Leinwand. His plan would include other public service agencies with the teacher training institution. See Gerald Leinwand's "Needed: A college of Public Education and Service." The Urban Review, April 1969, Vol. 3, 5, pp. 19-22. Also, see Saul B. Cohen, "Committee for National Program Priorities in Teacher Education." Mimeographed. Clark University.

[11] "A Five-year Goal for Training Complexes." Committee for National Program Priorities for Teacher Education (unpublished manuscript). A promising innovation that serves to provide additional training to experienced teachers and to allow for the restructuring of the schools is the so-called North Dakota Plan. See Henry S. Resnik's "Promise of Change in North Dakota." Saturday Review, April 17, '71, pp. 67-8

RECOMMENDATIONS

Based on the preceding report, the following recommendations are made:

I. All educational programs at the federal level be consolidated under one cabinet-level agency to be known as the Department of Education, with its director known as the Secretary of Education. Within the Department of Education the following recommendations are made:

A. Research and Development Programs are to be consolidated under the National Institute of Education.

B. Subsidies are to be provided for private industrial research and development of materials and equipment deemed desirable by the federal, state and local departments of educational services.

II. All educational programs at the state level are to be consolidated under one agency known as the State Department of Educational Services, with its director known as the State Commissioner of Educational Services. Within the State Department of Educational Services the following recommendations are made:

A. All programs of an educational or cultural nature are to be the Department's responsibility. Education is to be interpreted as more than schooling.

B. The Commissioner of Educational Services is to have direct and frequent contact with industrial, parent and representatives of other special interest groups.

III. To provide open and continuous dialogue between federal and state departments of education, an Advisory Board of State Commissioners of Educational Services is to be established.

IV. All educational programs at the local level are to be consolidated under one agency known as the Department of Community Educational Services, with its director known as the Commissioner of Community Educational Services. Within the Department of Community Educational Services, the following recommendations are made:

A. All programs of an educational or cultural nature are to be the responsibility of the Department.

B. The Commissioner of Community Educational Services is to have direct and frequent contact with industrial, parent, teacher, student and representatives of other special interest groups.

V. To provide an interlocking framework within which urban and suburban schools can function, the Cone Concept described in this report is recommended for adoption. Within the structure of the Cone Concept, the following recommendations are made:

A. Decision-making within each cone be decentralized to the Cone Council.

B. Peer working relationships involving teachers and administrators be developed between cones at given educational levels.

C. Career-oriented educational programs be developed, incorporating academic-vocational dimensions, and implemented within the framework of the Cone Concept.

VI. Teacher Training Institutions (TTI's) should be developed that have as their central focus the training of skilled teachers and the provision of technical knowledge about the teaching process.

VII. These TTI's should develop faculties that possess the teaching skills and knowledge they profess to teach.

VIII. Such faculties should be expanded to include specialists in teaching and communications from outside the schooling process (e.g., artists, writers, media specialists, film makers).

IX. TTI's should provide two services:

A. The training of skilled teachers for the schooling system.

B. The provision of teaching and communications know-how to the educational system.

X. TTI's should carefully consider whether they should continue to be a part of the university, particularly if their location in the university will in any way limit the kind of faculties they can attract, the kinds of programs they can develop, or minimize free public access to the TTI's facilities and resources.

XI. TTI's should develop leagues of cooperating schools and agencies that would provide practical settings for the training of teacher specialists, and from which clinical faculty members could be drawn.

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President's Commission on School Finance

Part III

COMPREHENSIVE BIBLIOGRAPHY OF SELECTED READINGS
on
THE FUTURE OF EDUCATION

by

Lillian E. Gray, Bibliographer

NOTE

The following bibliography presents selected readings on the future of education and includes references cited in Part II of the text of this report as well as additional readings pertaining to the topic. It is organized in terms of the four sub-topics of Part II:

A. Background to the Year 2000
B. Education and Schooling in 1980
C. Strategies for Change
D. Institutional Arrangements in 1980

A: BACKGROUND TO THE YEAR 2000

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